

**INCLUDING CHILDREN WITH ASD IN
REGULAR KINDERGARTEN AND FIRST GRADE CLASSROOMS:
TEACHER ATTITUDES, CHILD PROGRESS AND CLASSROOM QUALITY**

by

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Eileen McKeating, PhD

The enrollment of children with ASD in public school settings has escalated in conjunction with the increased incidence of the diagnosis (Yeargin-Allsopp et al., 2003). Characteristics associated with ASD can present unique challenges for both children and teachers in the classroom. According to many researchers, positive teacher attitudes are one of the most salient variables influencing successful inclusion of children with disabilities in regular classrooms (Bender, Vial & Scott, 1995; Buell, Hallam, Gamel-McCormick & Scheer, 1999; Chow & Winzer, 1992; Jamieson, 1984). There is less documentation of teachers' attitudes toward inclusion when children with ASD are enrolled in general education classrooms as well as the extent to which children with autism progress in inclusive classrooms. The current research addresses contextual factors that may impact child progress in kindergarten and first grade classrooms. More specifically, the study examines placement or the amount of special education that children received, the functional skill acquisition of children with ASD, as well as associations among teacher attitudes and the quality of the inclusive classroom setting.

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PREFACE

First and foremost, I'd like to thank my committee, particularly, my advisor, Dr. Louise Kaczmarek, for her guidance, support and insights over the years. Throughout the dissertation process, I counted on, and always appreciated her pursuit of precision and unwavering attention to detail. I'd like to thank Dr. Bagnato for providing me with valuable research experience during my tenure in his employ. Dr. Kostewicz always managed to help me to see the bigger picture, both in the research and through the dissertation process. Dr. Kronk was an inspiration in her work and in her thoughtful comments.

The support of my friends and coworkers has given me sustenance. I owe a debt of gratitude for the emotional support of my family through the years: my husband, five sisters, two brothers and my extended family. Their belief in me was stronger than my own. For my parents, who left us too early, but whom I carry with me every day.

1.0 INTRODUCTION

According to many researchers, positive teacher attitudes are among the most important variables influencing successful inclusion of children with disabilities in regular classrooms (for example, Bender, Vial & Scott, 1995; Buell, Hallam, Gamet-McDormick & Scheer, 1999; Chow & Winzer, 1992; Forlin, 1995; Jamieson, 1984; Lamberson, 2006; Lohrmann & Bamburra, 2006). The evidence base examining teacher attitudes toward including children with exceptionalities in regular classrooms has grown substantially in the past 25 years. As the prevalence of autism has risen in recent years, the enrollment of children with autism spectrum disorders (ASD) in public school settings has increased as well (Yeargin-Allsopp et al., 2003) but less is known about teacher attitudes toward including children with autism.

The characteristics associated with autism and the different degrees of symptomatology vary with age as well as ability. The diversity within the population of children on the autism spectrum and children's varying needs necessitate individual approaches to intervention and education. Because of the rise in the numbers of children diagnosed with autism, the heterogeneity of those individuals, the urgency of families seeking treatment and the lack of evidence-based interventions, the treatment of autism has become a controversial topic. One such controversy is educational setting. The question for caregivers, service providers and educators is whether interventions take place in segregated or inclusive settings, particularly as

children approach school age. Teachers are charged with supporting and facilitating children's adaptation and learning and their attitudes will impact this practice.

Various themes that have emerged from a review of the literature, offer insights into teachers' attitudes toward including children with disabilities in general education settings. However, current research has most frequently focused on teachers' perspectives of the inclusion of children with various disabilities, not specifically, children with autism. Due to the scarcity of empirical research involving teacher attitudes and children with autism, the search for studies was expanded to include attitudes toward children with disabilities. Severity of disability was a useful category, as children with autism were sometimes included with other diagnostic categories. In general, teacher training and professional development has frequently been reported to influence attitudes toward inclusion of children with various disabilities (e.g., Avramidis & Norwich, 2002; Scruggs & Mastropieri, 1996) and for children with autism (Jindal-Snape, Douglas, Topping, Kerr, & Smith, 2005; Lamberson, 2006; Messemer, 2010; Park & Chitiyo, 2011).

Teacher related factors (such as training, age and experience) have been examined more often than child-related factors, but not specifically for children with autism. Child-related factors that may impact teacher perceptions require further investigation, for example, skill acquisition of children in inclusive classrooms. According to Cook, Tankersley, and Cook (2000), empirical evidence is lacking that teacher attitudes toward the concept of inclusion correspond with effective instruction as well as student outcomes. Research is needed to discern whether functional skill acquisition is achieved for children with autism in inclusive settings. The current study will contribute to the research base by revealing: (a) if the children with autism make gains in functional skill acquisition over the course of the school year in the inclusive

classroom, (b) if the functional progress of children with ASD is associated with positive teacher attitudes toward inclusion and (c) if classroom quality is associated with children's growth and teacher attitudes.

It is clear that impact of teacher attitudes on classroom quality requires examination. There is no research, to date, that investigates the impact of teacher attitudes on the quality of their practice, specifically for children with autism. These topics will be addressed and the paper will conclude with questions that address research needs identified in the literature review.

1.1 DEFINITION OF TERMS

Characteristics of autism. The prevalence of autism spectrum disorders (ASD) in the United States has risen to 1 in 88 children according to the Centers for Disease Control 2010 data (CDC, 2012). The Diagnostic and Statistical Manual of Mental Disorders, (4th ed., text rev. {DSM-IV-TR}) designates five disorders on the spectrum: autistic disorder, Asperger's syndrome, Rett's syndrome, childhood disintegrative disorder and pervasive developmental disorder not otherwise specified (PDD/NOS). As the term "spectrum" in autism spectrum disorder (ASD) implies, children with autism are a heterogeneous group, with symptoms occurring along a continuum. The DSM-IV defines autism spectrum disorders as a group of neurodevelopmental disabilities characterized by the presence or absence of behaviors in the core areas of social reciprocity, communication, and restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (American Psychiatric Association, 2000). For a diagnosis of autistic disorder, the onset of these characteristics must begin prior to age 3 years and at minimum, 6 of 12 symptoms

must be present (a minimum of two symptoms in the area of social reciprocity and one in each of the communication and restricted interests and behaviors domains).

The nature of the disorder has profound implications for the functioning of children with autism in the general education classroom. Within the social and communication domains, children with autism have difficulty with eye contact, social orienting, joint attention, symbolic play, imitation, nonverbal communication, and language acquisition (Charman et al, 1997; Cox et al, 1999; Lord, 1995; Stone et.al., 1999). Atypical behaviors can be the most visible characteristic of ASD and may include rigid routine adherence to nonfunctional routines, repetitive, perseverative, preoccupations, self-injurious or stereotyped behavior (Hyman & Towbin, 2007).

Children with autism have difficulty understanding the nuances of social behavior and may appear to be uninterested in interacting with others (Baron-Cohen & Tager-Flusberg, 1994). In social and self-care areas, this diagnosis affects the child's ability to learn incidentally, and may require direct teaching of skills children typically acquire naturally. Children with autism have been found to have difficulty with organization (Kentworthy et al., 2005), which makes transitioning and completing tasks and activities challenging.

Auditory processing differences may interfere with the child's ability to follow complicated or multiple directives (Siegal & Blades, 2003) and difficulty in selectively focusing on particular sounds in environments with multiple or complex sounds (Teder-Salejarvi, Pierce, Courchesne, & Hillyard, 2005). Auditory filtering difficulties, sensory seeking and sensory hyposensitivity have been found to be associated with academic underachievement (Ashburner et al 2008) and lower participation rates in included students with ASD in regular classrooms

(Coster, Deeney, Haltingware, & Haley, 1998). Rigid thinking and focusing on details may impact acquisition of knowledge and academic success (Happe, 1994).

Although not one of the core deficits of autism, sensory processing problems are widely acknowledged as a common feature of the disorder. For example, after extensive review of studies, O'Neill and Jones (1997) report that atypical sensory responses develop early, are linked to other aspects of behavior, and affect the majority of individuals with autism. Sensory sensitivities can make filtering out background sounds difficult, which may adversely affect school performance (Ashburner, Ziviani & Rodger, 2008). Children with ASD often possess irregular patterns of cognitive and learning strengths and weaknesses, including splinter skills, isolated abilities (Jordan, 1999; Simpson, 2001) and uneven development.

A study by Eaves and Ho (1997) examining children with autism in inclusive classrooms reported high rates of hyperactive behaviors in those children; fifty-two percent had elevated scores on the Hyperactivity Index of the Conner's Teacher's Rating Scale (CTRS). The authors concluded that the inability of children with autism to self-regulate their emotions and behavior and to maintain attention, affects their progress in school. These characteristics are not unique to children with autism and will not be observed in all children with autism but when present, are features that may impact the classroom experience. In summarizing the challenges associated with autism, Thomas Whitman writes that although autism is a complicated disorder, "it ultimately represents a compromise that is reached by individuals who live in a world whose demands exceed their abilities to adapt in conventional ways" (Whitman, 2004, p. 51).

Due to all of the aspects related to the diagnosis, children with autism present unique and complex challenges in the classroom (Scheuermann, Webber, Boutot, & Goodwin, 2003). As children enter kindergarten and first grade and academic demands increase, features associated

with autism can present challenges to both teachers and children and their parents. The complexity of autism in conjunction with the many demands placed on public schools and the lack of evidence in the inclusive setting for many evidence-based interventions, complicate the process of inclusion (Tincani, 2007). Tincani (2007) outlines many of the difficulties in programming for children with ASD in general education. In addition to necessary support, training and resources, he cites including teachers not valuing the interventions and time-consuming district-mandated curricular and assessment processes (Tincani, 2007).

Definition: Progress. As one of the variables investigated in this research, child progress or growth must be defined. For the purposes of this study, child progress or growth is the desired outcome and will be measured in terms of functional skills that can be observed and reported by parents, family members, teachers, therapists; any members of the child's team. Children can demonstrate the skills in a number of ways through their everyday encounters with others, while performing routine tasks that will enable them to be more independent and through their growth in functional skills and knowledge. The specific tool used to measure progress will be described in a later chapter.

Definition: Placement. The three categories quantify special education services as follows (Pennsylvania Department of Education, 2008):

- Full-time: Special education supports and services provided by special education personnel for 80% or more of the school day
- Supplemental: Special education supports and services provided by special education personnel for more than 20% but less than 80% of the school day
- Itinerant: Special education supports and services provided by special education personnel for 20% or less of the school day

In the context of the research, special education services occur along a continuum and the

divisions used by the Pennsylvania public school system will be used in the analysis. In the present study, itinerant is synonymous with full inclusion.

Definition: Quality. For the purposes of the present study, quality is synonymous with classrooms where teachers support and encourage children's learning, acceptance and participation. The construct is measured using a tool described later in the manuscript, based on observing teacher behaviors and assessing classroom climate and teacher responses. In a classroom of high quality or enhanced inclusive practice, teachers plan and execute modifications and adaptations so that all children can be engaged at their level. In classrooms considered high quality, teachers present opportunities for all children, and accept and celebrate their differences.

Definition: Attitude. Attitude is an important construct in the study of social psychology and the definitions of attitude are many. According to Gall, Borg, and Gall (1996) an attitude can be defined as an individual's viewpoint or disposition toward a particular object (p.273). Attitudes are important on their own, but are critical because they have been associated with intentions, and ultimately, behavior. Attitude theorists, Eagly and Chaiken (2007) describe an attitude as: "a tendency or latent property of the person that gives rise to judgments as well as to many other types of responses such as emotions and overt behaviors (p. 586). They theorize that attitude has cognitive, affective, and behavioral components and explain that attitude formation may be conscious or subconscious. Past experience helps to form the evaluative aspects that are comprised of beliefs and thoughts, feelings and emotions, intentions and overt behavior (Eagly & Chaiken, 2007).

Theorists differ as to what comprises beliefs, attitudes and perceptions. However, most would agree that contrary to knowledge, which is objective; beliefs, attitudes and perceptions are

subjective and according to Stanovich and Jordan (2003) contain both evaluative and affective components.

Attitudinal barriers can take the form of misconceptions, stereotypes, fear, labeling, misunderstanding individual rights and isolation of children with disabilities (Odom, 2000).

Attitudes cannot be easily observed and so we need a way to ascertain how a person perceives the subject of our inquiry. The measurement of attitude “depends on attitudes being revealed in overt responses, either verbal or nonverbal responses (Krosnick, Judd, & Wittenbrink, 2005, p. 22). Surveys, questionnaires or interviews are often used for the purpose of discerning and measuring attitudes.

The significance of attitude. According to many researchers, positive teacher attitudes are the most important variable influencing successful inclusion of children with disabilities in regular classrooms (Bender, Vial & Scott, 1995; Buell, Hallam, Gamet-McDormick & Scheer, 1999; Chow & Winzer, 1992; Jamieson, 1984). Teacher attitudes are a vital component of successful inclusion, are at the root of the various environmental factors impacting inclusion and may be the factor most resistant to change (Gal, Schreur & Engel-Yeger, 2010).

Jordan and Stanovich (2003) define a continuum of beliefs about the nature of disability and contend that there are two opposite types, pathognomonic and interventionist beliefs. Teachers with pathognomonic beliefs, (derived from path-disease and gnomon-naming) focus on child deficits. They view their responsibilities for the instruction of students with disabilities as minimal. Teachers that hold interventionist beliefs focus on child/environment interactions and feel more responsible for engaging and teaching students with exceptionalities. Stanovich and Jordan (2003) argue that belief differences correlate with practice differences, not only in the quantity and extent of student engagement of teacher interventions with students with

disabilities, but with overall teaching effectiveness with all their students. They theorize that there is a relationship between teacher beliefs about children with special needs and inclusion and teaching practices. This relationship is cyclical and ongoing; beliefs lead to practices, which lead to student outcomes. If the outcomes are positive, this strengthens teachers' self-efficacy and beliefs about exceptionality, which influences teacher willingness to teach included students in the future (Stanovich, Lindsay & Jordan, 1997; Stanovich & Jordan, 2003).

Using this model, it is possible that some teachers may have a pathognomonic belief about children with autism, due to the nature of the diagnosis. The following factors may contribute to this belief: the identification of children by the diagnostic category and the stigma involved; the fact that ASD is diagnosed by credentialed mental health professionals, and the reality that much is still unknown about the disorder. The misconceptions and media attention that autism has received in recent years may exacerbate concerns for teachers with regard to including children with ASD in classrooms with their typical peers. In light of the behavioral issues, unique needs and characteristics typically presented in individual with autism, general education teachers may be conflicted about teaching children with autism in the regular classroom.

In a study examining views of autism, teacher views were compared with and mental health professionals, who had been established as experts based on their knowledge of the DSM-IV criteria for autism. Results showed that teachers and support staff had significantly different views of autism than the mental health professionals, including not believing the children had learning disabilities and describing autism as an emotional disorder and not a developmental disorder (Phelps, Newsom-Davis, & Callias, 1999). These misconceptions can affect teacher attitudes toward their students and foster problems in the teachers' ability to meet the needs of

their students. In order for children with autism to be afforded a quality educational experience, teachers must be committed and open to the experience and relationships are integral to the learning process.

Definition: Inclusion. Various definitions of full inclusion have been formulated; the basic premise being that students with special needs can and should be educated in the same setting as their typically developing peers with supports and services in place to appropriately address their needs (Mesibov & Shea, 1996). Inclusion has also been defined as the process of identifying, understanding and breaking down barriers to participation and belonging, going beyond education to cover the total experience of a child with autism and his/her family (Jones, English, Guldberg, Jordan, Richardson & Waltz, 2008). This broad concept of inclusion acknowledges the need to make adjustments to the learning environment and instructional practices in addition to within child factors in order to address the education of children with ASD.

According to Odom and colleagues (1999) the term “inclusive” (Stainback and Stainback, 1990) replaced such terms as integrated and mainstream for programs containing children with and without disabilities. Integration depended on whether the child could assimilate into the mainstream classroom, with no expectation that every child would have this capability (Thomas, 1986). Another difference between full inclusion and the earlier movements is that in prior movements (mainstreaming, integration), students have a special education setting as their base and are intermittently placed into regular settings, as opposed to full inclusion where the regular education classroom is the base (Mesibov & Shea, 1996). It must be noted that the terms seem to be used rather interchangeably in international literature. Inherent in the idea of full inclusion are that modifications must be made to the learning environment to

allow for full participation of the child with special educational needs (SEN). “Inclusion implies a restructuring of mainstream schooling so that every school can accommodate every child, irrespective of disability and assures that all learners belong to a community” (Avramidis & Norwich, 2002, p.131). Fuchs and Fuchs articulate the difference between full inclusion and inclusion by describing inclusion in the following way:

“Each special education placement on the continuum offers specialized, individualized, and intensive instruction that is continuously evaluated for its effectiveness. . . . The goal of special education instruction outside the regular classroom is to move students as soon as possible into settings closer to, if not in, the mainstream itself where they will perform satisfactorily.” p. 80.

1.2 THEORETICAL FRAMEWORK

The literature provides the background and knowledge base of a study; the theoretical framework supplies the premise (Camp 2001). Camp describes a theoretical framework as a set of theoretical assumptions that explain the relationships among a set of phenomena (Camp, 2001). It is under the auspices of the federal mandate for educating children with disabilities in the least restrictive environment that the research has taken place. The law provides the basis for inclusion in the United States and therefore, an integral part of the framework of the current study. In the U.S., two statutes of the Individuals with Disabilities Education Act (IDEA) (1997, 2004) are at the root of the issue of inclusion: (a) every child has the right to a free and

appropriate education (FAPE), and (b) services must be delivered in the least restrictive environment (LRE). The two aspects of IDEA (FAPE and LRE) are designed to promote access to the general education classroom and curriculum and state that children with disabilities, including children with ASD, are entitled to be educated with non-disabled peers.

The Individuals with Disabilities Education Act (IDEA) (2004) supports the practice of inclusion through the least restrictive environment provision. The LRE provision has remained intact since the inception of special education law in 1975. According to Section 300.114 (a)(2):

“Each public agency must ensure that – (i) to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children or are not disabled; and (ii) special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily” (IDEA, 2004).

LRE is addressed at the IEP (Individual Education Program) meeting by the child’s educational team, including the parent. Every child with a disability has an IEP, or a written statement of the child’s measureable goals. In addition, the IEP must state how much of the school day the child will be educated apart from nondisabled peers or not participate in nonacademic activities such as lunch or clubs. In order to address the child’s needs in the general setting, IDEA has intensified the role of the general education teacher, as an “integral team member in developing and implementing individual education programs (IEP’s) for students with disabilities” (Hedeen & Ayres, 2002, p. 181). The practice of inclusion

necessitates more communication and collaboration between special educators and regular educators than when segregated classrooms were the norm.

Teachers are required by law to consider the least restrictive placement for every child and to provide the rationalization in the child's IEP when a child is placed apart from typical peers. Any supplementary aids and services needed to support the child must also be documented. The interpretation of the mandates may be a source of dispute among stakeholders. According to Yell (1995) results of litigation after the inception of the law showed that IDEA does not require that students with disabilities be placed in regular education classrooms, but promotes the continuum of placements. The courts have held that students with disabilities should be educated in regular education settings when those settings can address the students' educational and social needs.

The basic assumptions underpinning the inquiries in the current study can be found in the federal law. It is within the context of IDEA, particularly the LRE provision, that teachers work and children are taught and make or fail to make progress. It would seem that inclusion requires an environment where teachers are willing and able to be flexible in terms of how the curriculum is delivered and to adapt the routines and physical environment to meet the needs of the child with ASD. Teacher attitudes affect the way they approach the task and ultimately impact the success of the placement.

1.3 HISTORICAL PERSPECTIVE

The trend toward including children with autism and other disabilities with typically developing peers has increased for several reasons. The impetus for this change is based on moral and ethical considerations that all individuals have the right to public education. Prior to the movement toward inclusion, children with autism and other severe disabilities were likely to be institutionalized or at the very least, educated in separate classrooms with other children with disabilities, or in different schools altogether. Inclusion, in the U. S., and on an international level, evolved as a matter of social justice and entitlement (UNESCO, 1994).

Family members, parents, professionals and other advocates of inclusion, more than any research based evidence have driven state and federal policies (Stainback & Stainback, 1992). The voices have been particularly strong for families of individuals with autism (Biklin, 1987; Schwartz, 1983; Warren, 1987). Many parents and professionals believe that inclusion fosters overall progress in children with autism, provided there is collaboration between home and school, positive behavioral supports and curricular modifications to meet the child's needs.

Even though the educational system in the United States has moved toward including children with profound disabilities in regular classrooms with typical peers, specialized programs for children with autism, specifically, seem to be increasing exponentially. Some researchers suggest that a segregated setting may be less restrictive for some children on the spectrum, stating that the predictability of the segregated classroom may provoke less stress on the child (Hyman & Tworbin, 2007). It has also been suggested that the increase in special programs may be due to demand, because the "special segregated program" appears to have become

synonymous with “appropriate program” (Marks, 2007, p. 265). Susan Marks (2007) writes that more attention has been given to segregated programs for three reasons:

1. The education system and parents of children with ASD often assume that disability specific strategies and settings will likely meet the needs of the children;
2. Special correlates with better and specially trained professionals will be able to address the child’s unique needs (Osgood, 1999); and
3. Earlier research on interventions for autism, particularly high intensity one-on-one interventions, have shown positive results (Reed, Osborne, & Corness, 2007; Weiss & Delmolino, 2006).

Marks (2007) has qualified the last statement, writing that even though research on these intensive programs is based on very young children, stakeholders may assume that children in kindergarten and at school age require this type of segregated and rigorous program. Rita Jordan (2005) suggested that specialist treatments used in early intervention are aimed at “helping to reduce the core difficulties cause by the ASD” (p. 108) but may actually have adverse effects on later inclusion. The reason for this, Marks has claimed, is that the more the approaches differ from instruction in typical settings, the more challenging it will for children with autism to be fully integrated into regular classrooms. Other experts have conclusively stated that providing individuals with intensive interventions beginning early in their lives, allows many to benefit from more typical educational settings (e.g. Ferraioli & Harris, 2011; Lovaas, 1987; Smith, Gruen & Wynn, 2000).

Despite the disparate opinions of parents and professionals and the continuing debate around including children with disabilities in regular classrooms, the practice has become widespread. In addition to the expansion of specialized programs, the numbers of children with

ASD in public school settings in recent years has also increased in conjunction with the prevalence rates of autism (Yeargin-Allsopp et al., 2003). The U. S. Department of Education, National Center for Education Statistics (2010) reveals that approximately 90% of children with autism were served in regular schools. The amount of time spent in the regular classroom varied with an average of 36.9 percent of children spending less than 40% of time in school in the general education classroom.

1.3.1 Inclusion in early primary school

According to the US Department of Education (2004), the numbers of preschool and kindergarten children with developmental delays served in inclusive settings has increased considerably. However, children with developmental problems originally enrolled in fully inclusive settings are placed in less inclusive settings as they move from early childhood to the early elementary years. Odom and colleagues (2004) outline the differences that distinguish preschool from elementary contexts that make inclusion more challenging at school age. They cite four factors that favor preschool inclusion: (a) preschools are often outside the public school system, in community-based settings with smaller class sizes and adult/child ratios; (b) the focus is on developmental domains as opposed to academic subjects; (c) there is less discrepancy in development between very young children with disabilities and peers and social relationships are more fluid; and, (d) high stakes testing, mandated in elementary school, does not apply to preschool (Odom et al., 2004).

Hanson (2001) tracked children with disabilities as they transitioned from preschool into the early elementary years and documented their type of placement. Sixteen percent of children

entering kindergarten, moved to segregated placements and this represented 4% decrease in inclusive placements from 64% to 60%. In the transition to first grade, the number of children placed in segregated placements doubled, from 16 to 32%. The rate of inclusion was stable in the subsequent school years (Hanson et al., 2001).

A later study corroborated these results (White, Scahill, Klin, Koenig, & Volkmar, 2007). Researchers examined the impact of child characteristics on educational placement and service decisions for children with autism across grade levels (White et al., 2007). They found that children in segregated classrooms had lower IQ and lower ratings on tests of social and communication skills than children in regular classrooms (White et al., 2007). Child placement status was reported to remain fairly constant with children who began school in inclusive settings remaining in that setting and students who began in segregated settings staying in special education (White et.al., 2007). This research suggests that kindergarten and first grade placements are critical as they may set the child's future educational placement trajectory.

1.3.2 Inclusion of children with autism

In 2001, the National Research Council (NRC) published recommendations for implementation of best practices in educating students with autism. They concluded that students with ASD should receive individualized interventions on a daily basis in settings with typically developing peers. The problem with the endorsement is that little evidence exists that inclusive settings are optimal for children with autism. The movement to full inclusion in educational settings preceded evidence-based research on the documented benefits of the practice for children with autism (Mesibov & Shea, 1996). Fifteen years and much debate later, one might ask if this is

still the case? As late as 2011, Ferraioli and Harris reported that there is no evidence to support inclusive placements for children with ASD, particularly for those children who have not experienced or benefited from early intensive behavioral intervention. The paucity of studies into the efficacy of inclusion for children with autism may be because the practice of inclusion is complex and multi-faceted and children with ASD have such diverse needs and skills.

There have been few large-scale evaluations of inclusive programs in public schools, particularly in the primary grades. More often, evidence based, highly visible programs for children with autism have been carried out in private or university based schools, as opposed to public school systems (Anderson, Campbell, & Cannon, 1994; McClannahan & Krantz, 1994; McGee, Daly & Jacobs, 1994. Frequently, these programs are segregated and children are often required to earn entry into inclusive or integrated settings (Bondy & Fronst, 1994; Handleman & Harris, 1994).

The effect of ASD on the school functioning of children with an ASD diagnosis has not been well researched with the exception of a few studies. For example, data from the National Education Survey of Before and After School Programs and Activities (ASPA-NHES) was analyzed to investigate the characteristics of children with autism (Montes & Halterman, 2006). Researchers discovered that children with autism were more likely to receive individual education programs (IEP's) than children with other disabilities and more apt to be enrolled in services through local or state health and social services agencies. Despite receiving these services, children continued to show significant behavior and academic performance problems (Montes & Halterman, 2006). Researchers agree that access to typical peers in inclusive settings isn't enough to justify placement; children with autism deserve opportunities to learn and progress, not merely be in the proximity of typical peers (e.g., Huntz & Goetz, 1997).

Several models for the inclusion of students with autism in the primary grades have been proposed in recent years. They tend to provide a framework rather than specific practices for teachers to implement. For example, Simpson, de Boer-Ott and Smith-Myles (2003) have developed an inclusion model, the Autism Spectrum Disorder Inclusion Collaboration model. This model identifies five components to successful inclusion for this population, including: environmental and curricular modifications, attitudinal and social support, coordinated team commitment, recurrent evaluation of inclusion procedures and home-school collaboration

The authors emphasize that attitudes of school personnel, including teachers, will largely determine the success of this model or any other inclusion effort. According to these authors, the attitude that students with ASD are ill-suited for inclusion will become a self-fulfilling prophecy, the experience will be short-lived and the child will not benefit from being in the inclusive classroom (Simpson, de Boer-Ott and Smith-Myles, 2003). Simpson and colleagues go on to say that because of the tremendous impact of teacher attitudes on the student's social, behavior and academic functioning, teacher attitudes should be taken into account prior to a child with ASD being placed in an general education setting. Not only are attitudes explicit in this model, but are implicit in team commitment and the willingness to collaborate with parents and caregivers.

1.4 PURPOSE OF THE RESEARCH

The enrollment of children with ASD in public school settings has escalated in conjunction with the prevalence rates of autism in recent years (Yeargin-Allsopp et al., 2003). There are disparate findings on the impact of teacher attitudes and the quality of inclusive practice in the classroom.

This study will attempt to address the issue posed by Cook, Tankersley, Cook, and Landrum (2000) that no empirical evidence exists that teachers' attitudes of inclusion correspond with effective instruction and student outcomes. The goal of this research is to investigate the functional performance of children with autism and teachers' attitudes toward inclusion when children with autism are enrolled in their classrooms. Based on a review of existing research, child related factors that are hypothesized to impact teacher attitudes will be investigated. More specifically, the studies will examine the extent that children with autism are included in the regular education classroom; and associations among teacher attitudes, the quality of the classroom environment and functional skill acquisition of children with ASD.

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1.5 RESEARCH QUESTIONS

It is the intent of the present study is to answer the following research questions relating to the inclusion of children with autism and profound disabilities in kindergarten and first grade classrooms:

- 1) Are children with autism placed more frequently in full-time special education services than children with other diagnoses?
- 2) Do children with ASD who receive itinerant, supplemental, and full-time services make gains in functional skills over the course of the school year?
- 3) Is the type of placement of children with ASD associated with children's functional assessment scores at posttest?
- 4) Do teacher perceptions and/or classroom quality predict functional skill assessment scores at posttest of children with ASD?
- 5) Is classroom quality associated with more positive teacher attitudes towards inclusion of children with ASD?

2.0 REVIEW OF THE LITERATURE

The search for articles on teacher perceptions toward inclusion uncovered a plethora of studies on teacher attitudes toward inclusion of children with various disabilities. Studies examining attitudes toward children with autism are limited. For this reason, this literature review will encompass research that investigates teacher attitudes toward children with disabilities in general, before discussing in detail teacher attitudes toward inclusion relative to children with ASD. The focus will be on studies that examine child factors that may impact teacher attitudes. The evidence base for inclusion of children with autism and other disabilities is more established for early childhood, including studies of childcare and preschool classrooms. Due to the nature of early childhood settings and the previously discussed contextual differences between early childhood and primary school settings (Odom, et al., 2004), a conscious decision was made to include studies of children with autism in elementary school, not studies of early childhood inclusion.

The following literature review is intended to provide the background and rationale for the study presented in this paper. This research will address whether changes in teacher attitudes are associated with child functional skill acquisition and the quality of classroom practices. Other possible variables influencing teacher attitudes toward including children with autism will be examined as well.

2.1 LITERATURE SEARCH

Five major search modes initially used by Cooper (1985) were employed to identify relevant articles: subject index searches, citation searches, browsing, footnote chasing and consultation. The following search engines were utilized: Educational Resources Information Center (ERIC), PSYCHINFO, Academic Search Premier, Google Scholar, EBSCO Host, Justor, Academic One-file, Proquest Dissertation and Theses, and Springer Link. Citations and reference lists of relevant articles were scanned. The following specific journals were targeted as well: *Exceptional Children*, *Focus on Autism and Other Developmental Disabilities*, *Journal of Autism and Developmental Disorders*, and *Autism: The International Journal of Research and Practice*.

2.2 ATTITUDES TOWARD INCLUSION

The literature base relating to teacher perceptions of inclusion of children with various disabilities began around 1980 and has grown substantially since. Studies in this review are limited to western cultures: the U.S, Canada, Europe and Australia. The decision was made to limit studies in this way due to cultural differences surrounding disability and education. Studies examining teacher attitudes toward inclusion of children with various disabilities is far too extensive to describe here. A general observation from the literature search revealed that studies of attitudes toward inclusion peaked in the United States in the 1980's and 1990's. Several

literature reviews on the topic have been published in the United States (Scruggs and Mastropieri, 1996) and more recently, in Europe (Avramidis & Norwich, 2002; de Boer, Jan Pijl & Minnaert, 2011). Prior research has shown that teacher attitudes are consistently correlated with successful inclusion (Buell, Hallam, Gamel-McCormick & Scheer, 1999; Chow & Winzer, 1992). According to several studies, positive teacher attitudes are the one of the most important variables influencing successful inclusion (Bender, Vial & Scott, 1995; Buell, Hallam, Gamet-McDormick & Scheer, 1999; Chow & Winzer, 1992; Jamieson, 1984). This is not unexpected, given that teachers are on the front line of the efforts toward inclusion, the actual implementers of the practice. Teacher attitudes are pivotal because their acceptance will likely affect their commitment to the practice of inclusion (Norwich, 1994). Neil Humphrey (2008) has written that no strategies used in inclusive classrooms are apt to be successful without a foundation of values of respect for diversity and commitment extending to all students and attitudes that reflect those values.

Tempered acceptance of inclusion among teachers was apparent from a review of the literature. Numerous issues impacting the attitudes of teachers emerged. Six such factors will be the focus of this literature review: training and paraprofessional support, severity of the child's disability, placement (the amount of time the child spends in the regular classroom in segregated settings, teacher contact with children with disabilities and child progress and classroom quality.

2.2.1 Professional development and support

Since the 1980's, researchers have reported that teachers on both sides of the inclusion debate express the need for more support, resources and training in implementing inclusive practices.

Researchers in the UK published a synthesis that looked at inclusive practices around the globe and found that attitudes toward inclusion were consistently associated with available supports (Avramidis & Norwich, 2002). The authors called for future research to be more specific on several fronts, one of which was the “quality of their experiences with different learners” (p. 144).

In general, the need for training and supports has permeated the literature and has been a recurrent theme in studies of teacher attitudes toward inclusion. For example, in a seminal review of studies, Scruggs and Mastropieri (1996) provided an extensive research synthesis of studies spanning three decades. The authors aggregated responses of 10,560 teachers and school personnel regarding attitudes toward inclusion. Two-thirds of general education teachers supported inclusion in theory, but less than a third of teachers felt equipped to teach in inclusive classrooms, citing insufficient resources, lack of training and inadequate support as the reasons (Scruggs & Mastropieri, 1996), a recurring finding in many studies in this review.

Werts and colleagues (1996) surveyed 1,430 kindergarten through sixth grade teachers regarding available supports and resources for inclusion. This predominantly experienced group of teachers perceived substantial discrepancies between the availability of training and the need for training, including “in-service training at the onset of the school year, regular and ongoing training, opportunities to attend conferences and opportunities to observe other teachers” (Werts, Wolery, Snyder, Caldwell, & Salisbury, 1996, p. 201). They also found that teachers that rated their students as high in disability areas reported needing more resources than teachers of students with milder disabilities. Regular educators continue to report that they feel ill-prepared to include students with disabilities, as they lack the necessary confidence, knowledge, training to do so (Bennett, 2009).

Lohrmann and Bambara (2006) used qualitative methods to investigate primary teacher beliefs about supports in inclusive classrooms. Fourteen teachers were interviewed on topics related to the inclusion of children with challenging behaviors. All of the teachers stressed the need to have supplementary in-class support personnel. They reported the importance of supports available to assist with adapting instruction, executing behavior support plans or providing individual help when the focus student needed help. They also agreed that supports, in the form of paraprofessionals or special education teachers was most beneficial when they were able to blend in and assist other students, in addition to the assigned student (Lohrmann & Bambara, 2006).

The effect of in-service training on attitudes toward including students with autism in the general education classrooms is the subject of another, larger study (Lamberson, 2006). The author developed a general one-hour training over two days for teachers on inclusion. The focus of the training on the first day was education law, disability etiquette and characteristics of autism. The second hour on the following day focused on brain research and classroom modifications. Perceptions of 453 general elementary teachers were measured using an adaptation of the *Opinions Relative to Integration of Students with Disabilities* scale. The author conducted regression analyses to establish if this type of professional development positively predicted the inclusion of children with autism into the general education setting on four factors: (a) benefits of integration, (b) integration of classroom management, (c) perceived ability to teach students with autism, and; (d) special versus integrated general education. Analysis of variance revealed significant differences on the factors of integration of classroom management, perceived ability to teach students with autism, and special versus integrated general education over time. This study was consistent with findings of many researchers citing the importance of

inclusion training and professional development for teachers (for example Buell et al., 1999; Center & Ward, 1987; Dickens-Smith, 1995, Leyser & Tappendorf, 2001).

There was one study however, that found no difference in attitudes to training. Wilkins and Nietfield (2004) found no significant difference in the attitudes of 89 middle school teachers who had 50 hours of training, staff development and additional classroom support compared with teachers who had no similar trainings and support.

This was not the case for a recent study by Messemer (2010), investigating perceptions of general education teachers regarding the inclusion of children with ASD. More specifically, this qualitative study used interviews to examine the relationship between self-efficacy and the willingness of ten teachers (six of whom taught primary school; four teachers taught middle and high school) to teach children with autism in inclusive classrooms. Twelve open-ended questions were used during the interview process. Participants were unanimous (10/10) in reporting that disruptive behavior had a negative impact on their ability to teach and the students to learn. Analysis also revealed that nine out of the ten participants believed they could teach all students in their inclusive classrooms, however, inclusion required additional administrative support, planning time and professional development (Messemer, 2010). This result has been reaffirmed by other studies (for example Barnes, 2008).

Sixty-seven special education teachers in Spain were surveyed regarding their attitude towards teaching children with ASD and the data was analyzed for possible attitude predictors (Rodríguez, Saldaña, & Moreno, 2012). Membership in a support network was reported to reliably predict attitude ($z = 8.54, P = .003$). The authors concluded that it is a highly probable that support in the form of training and a commitment to the teaching of children with ASD are imperative to positive attitudes toward teaching children with autism.

Lohrmann and Bambara (2006) used qualitative methods to investigate primary teacher beliefs about supports in inclusive classrooms. Fourteen teachers were interviewed on topics related to the inclusion of children with challenging behaviors. All of the teachers stressed the need to have supplementary in-class support personnel, namely, a paraprofessional or special educator. They reported the importance of supports available to assist with adapting instruction, executing behavior support plans or providing individual help when the focus student needed help. They also agreed that the presence of support personnel was most beneficial when they were able to blend in and assist other students, in addition to the assigned student (Lohrmann & Bambara, 2006).

The most recent study on the subject of attitudes toward including children with ASD examined the influence of various teacher demographics ($n=127$) on their attitudes (Park & Chitiyo, 2011), including workshop attendance. Analysis of variance revealed significant differences across age groups, with teachers over 56 years of age having the most negative attitudes. Elementary school teachers had significantly more positive attitudes compared to middle and high school teachers. Variables related to the inclusion of children with autism were measured using the Autism Attitude Scale for Teachers (Olley et al, 1981). The authors reported that the respondents had positive attitudes toward children with ASD, and ratings were influenced by age, gender, workshop experience and grade level taught. The highest scores were on items related to the inclusion of children with autism in public schools on a scale of 1 (strongly disagree) to 5 (strongly agree). The following three reverse scored items had the highest means when reverse scored: (a) typically developing children and children with autism should be taught in separate schools ($M=4.23$, $SD=0.78$); (b) children with autism are too impaired to benefit from the activities of a general school ($M=4.22$, $SD=0.65$); (c) if I had the

chance, I would teach in a school where there were no children with autism ($M=4.22$, $SD=0.79$). This scale contains many negative items and these particular items are extreme so it is not surprising that the items had the highest ratings.

2.2.2 Severity and type of disability

It appears that, although the attitudes of teachers have generally been positive toward inclusion, a review of the literature has revealed many mediating factors. Several studies have shown that mainstream teachers' belief that children should be educated in regular classrooms decreased rapidly with the increase in severity and the educational implications of the child's disability (Avramidis & Norwich, 2002; Forlin, 1995; Scruggs and Mastropieri, 1996). Cook (2001) also found that teacher's attitudes toward including children with disabilities were contingent on the severity and obviousness of the disability. In addition to teacher attitudes toward the concept of inclusion, teachers' attitudes toward their included students have also been shown to affect children's classroom experiences and the quality of interactions. Cook (2001) designated subjects in a study on inclusion into two groups: students with hidden disabilities ($n = 173$) which would include those with ADHD, LD and behavior disorders and students with obvious disabilities ($n = 48$) including students with intellectual disabilities, sensory and orthopedic impairments, and autism. Children with obvious and hidden disabilities were found to elicit indifference in their teachers. He found that teachers nominated only 16.7% of children with obvious disabilities in the category of children they would feel most relieved if they were removed from their class. This counterintuitive outcome was attributed to the theory of differential expectations (Cook & Semmel, 1999; 2000), in which teachers anticipate, explain

and excuse the atypical behavior and capability of children with obvious disabilities; hence, they tend to not reject those students (Cook, 2001).

The author interpreted this result as meaning that students with the most intensive needs (i.e., autism), are less often rejected by teachers than students with mild disabilities because teachers do not adjust expectations for the group of children with mild disabilities. However, teachers felt attached to only three students with obvious disabilities and nine students with hidden disabilities. It was not disclosed how long the teachers knew the students before filling out the nomination form, and if their nominations were based on the diagnoses, or the teacher's knowledge of the individual child.

Positive attitudes toward inclusion have been associated with teaching students with physical disabilities as opposed to cognitive or behavior disorders (Soodak, Podell & Lehman, 1998). Other studies have found that teachers were more willing to include children with learning disabilities than students with intellectual or severe disabilities (Diebold & VonEschenbach, 1991). Teachers often perceive children with emotional and behavioral challenges as the most difficult needs to meet (Bowman, 1986; Chazan, 1994) followed by students with learning disabilities and sensory impairments (Clough & Lindsay, 1991).

Levins, Bornholt, and Lennon (2005) compared the attitudes of 45 pre-service and 23 in-service teachers toward children with disabilities. Respondents were asked to complete a rating scale to decipher their attitudes toward students with attention deficit hyperactivity disorder (ADHD), a physical disability, intellectual disability, and behavioral intentions. Attitudes did not differ between pre-service and in-service teachers based on whether they had professional or personal experience. They found that more positive attitudes prevailed toward children with cognitive needs (effect size 1.0 SD) than attitudes toward children with social needs, which were

less positive (effect size 0.6). Evidence of child disability type impacting teacher attitudes toward inclusion was discussed for various categories of disability in the literature.

Center and Ward (1987) noted that general education teachers were positive about including only those students who were not likely to require additional instructional or management effort from the teacher. Children on the autism spectrum often require modifications to the environment, curriculum and instructional practice. Even early childhood educators, who have fewer academic demands (Odom et al., 2004) reported that children with autism require a large amount of accommodations and it this would prove burdensome to have these students enrolled in their general education settings (Stoiber, Gettinger, & Goetz, 1998).

Another recent study that reflected this sentiment focused specifically on teachers' attitudes toward including children with autism who require augmentative and alternative communication (AAC) in regular education classrooms (Finke, McNaughton & Drager, 2009). In this qualitative study, five elementary school level teachers completed surveys that contained questions related to their experience and training on ASD and AAC. The teachers then participated in online focus group discussions that required weekly visits to the site to respond to questions posted by the moderator and to comment on ideas expressed by the other participants. Coordinating schedules for various services of the child with ASD while providing essential instruction in core academic areas was reported as a challenge for all of the participants. All participants believed that a positive attitude was critical to the success of inclusion. All five participants documented the need for additional supports in the classroom, training and reduced class size (Finke, McNaughton & Drager, 2009). Discussion revealed both positive and negative consequences of inclusion for all children in the classroom. Negative responses were reported by four teachers, in terms of increased stress due to noise level and irregular routines in the

classroom. The participants reported that the noise level (e.g., when children with ASD repeated sounds, or shouted out) impacted their ability to teach and four teachers reported frustration with additional planning time to accommodate the child with autism.

Regular education teachers have been shown to have greater misconceptions of the characteristics associated with autism (Mavropoulou & Padelidu, 2000). As revealed in the results, this fact may reflect experience with children on the autism spectrum. Only one item on the survey used in the study was specifically related to integration; the item was: “Do you believe that it is possible to integrate a child with autism in a class with normal children?” (p. 182). The researchers found that 55% of the regular education teachers and 37% of the special education teachers had positive views regarding the integration of children with autism. This reason for this difference may be reflected in the finding that regular education teachers placed a significantly higher priority on the development of affective relationships with others than did special education teachers ($X = 16.49$, $p < .001$). Special education teachers focused more on reduction in self-injurious and repetitive behaviors and communicating desires. The different focus of general and special educators is an important finding. It reveals how general and special educators can complement one another in that children benefit from both approaches and intervention may be necessary to improve social skills and communication and reduce repetitive behavior.

Robertson, Chamberlain, and Kasari (2003) also investigated the impact of behavior problems on teacher ratings of their relationships with students. The researchers examined the relationship of 12 regular education classroom teachers of 187 second and third grade students, including 12 students with a diagnosis of autism. Teachers completed a survey assessing personal and work related characteristics including the teacher’s relationship with the student

with autism in their classroom. In addition, teachers completed the Student Teacher Relationship Scale, a rating scale used to assess teacher's feelings about their relationship with the student and their beliefs about the child's feelings toward them, as well as the student's interactive behavior with the teacher. Although this study did not specifically address teacher attitudes, this study is pertinent because it examines their beliefs about the included student with autism and the behaviors they exhibit. Research findings revealed that teachers had generally positive relationships with included students with autism. Higher ratings of behavior problems exhibited by the children with ASD tended to lower the quality of the teacher-student relationship. The authors reported that:

“... student-teacher relationships are predictably related to student behaviors. For example, students who were reported as displaying behaviors consisting of hyperactivity/impulsivity and/or opposition/defiance were rated as having highly conflictual and dependent relationships with their teachers (p. 128).

The researchers indicated that students that had discordant or dependent relationships with the teacher, per teacher report, were also rated by their peers as having lower levels of social interaction within the class. High negative correlations were found to exist between the level of social inclusion for the students with ASD and behavioral problems. Specifically, researchers found that teacher reports of inattentive behaviors and peer ratings of the students' level of social inclusion were highly correlated ($r = -.71$, $p, .01$). The authors explain that the associations may be barriers to successful inclusion (Robertson, Chamberlain, and Kasari, 2003).

Even after completing an introductory training on inclusion, Lambert, Curran, Prigge, and Shorr (2005) found that 479 preservice elementary and secondary teachers rated including students with intellectual disability and behavior problems more negatively than other categories.

This relationship between behavior issues and negative attitudes toward inclusion is especially salient for children with autism, who often engage in behaviors that may be challenging for teachers and exacerbated by the classroom environment.

2.2.3 Paraprofessionals in the classroom

Researchers have investigated the impact of the presence of paraprofessionals accompanying included children in the general education classroom. Many students with autism have one-on-one aides or therapeutic support staff (TSS) for part or all of the day. Their responsibility is to help the child maintain attention and motivation, to make environmental modifications when necessary, to aid in academics and other learning, reduce their frustration and behavioral problems, and help the student work and interact with peers (Robertson, Chamberlain and Kasari, 2003). The practice is not without problems and Michael Giangreco, in particular, has written extensively about the detrimental effects of relying on paraprofessionals in the inclusive classroom. Some studies have revealed that the presence of paraprofessional results in teacher and peer estrangement, dependence and stigmatization of the included child (Giangreco, Broer, & Edelman, 2001; Giangreco, Edelman, Luiselli, & MacFarland, 1997).

For example, a study in 1997 investigated three children with autism between the ages of 7 and 9 who were assigned paraprofessionals in inclusive classrooms. They looked at children's on-task and in-seat behavior, inappropriate vocalizations and self-stimulation in relation to the how near the paraprofessionals were to the child during instruction (Young, Simpson, Myles, & Kamps 1997). They reported that students' behavior was not dependent on the proximity to the paraprofessionals, except that vocalizations typically occurred when the paraprofessionals were

within two feet of the child. An interesting finding was that teachers initiated communication with the children with autism more often when the paraprofessionals were either out of the room or more than two feet from the child (Young et al., 1997).

Jull and Minnes (2007) reported on 115 preservice teachers who were presented with vignettes in which students either had or did not have an Educational Assistant and asked to rate their perception of support and their opinion of continuing the inclusive provision of the child in the regular classroom. Subjects were asked to consider previous experience in addition to the specific vignette scenario. They found a significant relationship among perceived quality of support and positive contact and attitudes toward inclusion. The authors made a valid point that the teachers' expectations of support should be considered when measuring teacher attitudes. However, although invented scenarios are sometimes used in research, results based on hypothetical, as opposed to real life situations, may have limited generalizability.

Teachers may initiate contact more often when paraprofessionals are not engaged with the child because paraprofessionals often assume principal responsibility for the included child. This tends to lessen interaction between the student and the general education teacher and separates them from the peer group (Marks, Schrader, and Levine, 1999; Giangreco, Edelman, Luiselli, and MacFarland, 1997). General education teachers report that the presence and proximity of paraprofessionals allowed them to avoid assuming responsibility for the education of the students with disabilities placed in their classroom.

In this same vein, Cook, Cameron & Tankersley (2007) reported that when other variables were held constant, the presence of paraprofessionals significantly predicted average indifference ratings of their included students. "Each hour of paraprofessional presence per week was associated with a .014 increase in teachers' average indifference ratings toward their

included students with disabilities” (p. 237). The authors note that higher indifference ratings toward the included students is concerning considering children with disabilities require additional teacher interaction.

Not all results on the impact that paraprofessionals may have on the attitudes of classroom teachers toward included students have been negative. Robertson, Chamberlain and Kasari (2003) also examined this relationship in the aforementioned study and reported contrasting results. Two thirds of the paraprofessionals stayed with the students with autism for the entire school day and one third supported the child for a few hours throughout the day, mainly to assist with specific academic subjects. Teachers reported comparable levels of closeness whether paraprofessionals were assigned to children or not, based on mean ratings of teachers’ perceptions of closeness, conflict, and dependency. In addition, Subban and Sharma (2006) surveyed 122 teachers in Australia about their attitudes toward inclusion. The teachers’ main concern was the insufficient provision of paraprofessional staff at their schools, to assist students with disabilities.

It appears that teachers prefer the classroom support of paraprofessionals, despite reported negative impacts on the relationships between students and teachers. However, even within a small qualitative study of eight, special education and six general education teachers, (Nickels 2010) reported conflicting results. All teachers believed that not every child with ASD requires an individual aide, but two general education teachers had very different experiences with support staff. One middle school teacher reported that, in her experience, the one-on one aide was responsive and respectful, followed her lead and did not disrupt her relationship with the child. Conversely, an elementary school teacher reported that the aide in her class and the target student were in their “own universe” (p. 177). The aide was only concerned with the

assigned child and everything had to revolve around his needs, sometimes disrupting the entire class and the teacher felt that the child was too dependent on the aide.

2.2.4 Placement

Related to the topic of the severity and type of child disabilities is the impact of the disability on teachers' perceptions of how fully the students should be included. In a review of studies by Ward, Center and Boechner (1994), it was revealed that preschool teachers had the most positive attitudes, followed by resource teachers and psychologists, with classroom teachers expressing the least enthusiasm for full inclusion. The persons with most contact and responsibility for children in inclusive classrooms held the least positive attitudes. Studies have found that many teachers prefer part time over full time inclusion of students with disabilities (Avramidis & Norwich, 2002; Forlin, 1995; Mastropieri & Scruggs, 1999; Nickels, 2010). This may be because children who have profound intellectual and/or behavioral disabilities may require very extensive attention and partial inclusion may be best (Dunlap & Fox, 2002).

Other early studies have reported that elementary school teachers either were not opposed to pull-out models (Coates, 1989) or actually favored pull-out models for children with disabilities (Semmel et al., 1991). Forlin (1995), for example, reported that majority (86%) of teachers believed that children with mild intellectual disabilities should be integrated on a part-time basis into regular classrooms and only one percent considered full inclusion was appropriate, citing teacher stress as the reason that part-time placement was more acceptable than full time inclusion in general education classrooms. In a qualitative study of eight special education six general education teachers from pre-kindergarten through high school, Nickels

(2010) reported that all of the teachers believed in the benefits of partial inclusion in general education settings for children with ASD. Inclusion affords access to typical peers as social skills and communication role models for children with autism. However, teachers stressed the importance of direct services, such as speech-language therapy, occupational therapy and part-time resource services for children with ASD in inclusive placements (Nickels, 2010).

If teachers are unsuccessful in their attempts to help children to progress, it would follow that their sense of self efficacy would be affected and hence the teacher's attitudes. Soodak and Powell had reported that teachers with a high sense of self-efficacy recommended regular education placement more often (Soodak & Podell, 1993, 1994). Another recent study compared parent and professional perceptions of educational interventions for children with autism (Nickels, 2010). Interviews were conducted with seven parents, eight special education teachers and six general education teachers. Although, not specifically examining perceptions of inclusion, some discussion focused on general education teacher attitudes toward including children with autism in their classrooms. Respondents were reporting on what they had observed from other teachers, which is different from self-reporting. They favored inclusion for the provision of access to modeling behaviors of typical peers. They discussed a "lack of acceptance of the child with autism, inflexibility, a one-size-fits-all teaching mentality and unwillingness to differentiate instruction" (Nickels, 2010, p. 222). These approaches are problematic, particularly for children with autism who require help in attending, coping with environmental stressors, and regulating their behavior and emotions. This study may illustrate the inherent difficulty with interviews; perhaps the participants did not feel comfortable using self-report and preferred to use examples of other teachers' opinions. Although this type of open, general questioning may

be less reliable because it represents what is known in legal terms as hearsay, it may contain honest, less inhibited expression.

A study by Jindal-Snape and colleagues (2005) examined perceptions of parents, teachers and psychologists toward educating students with ASD. Their study focused on five students, transitioning from elementary to secondary school in various placements. Stakeholders were interviewed on what placement along a continuum was most appropriate for students with ASD and what was needed to realize the chosen placement (Jindal-Snape, Douglas, Topping, Kerr & Smith, 2005). Parents unanimously believed that autism-specific training should be required for teachers. The authors concluded that regardless of the type of services provided, the most important aspects of successful inclusion were twofold, staff attitudes and modification of the curriculum.

Heiman (2004) also found that the majority of teachers surveyed preferred that students receive academic support outside of their classrooms but favored inclusion; subjects supported partial inclusion, not fully inclusive placements. According to von der Embse, Brown, and Fortain (2011), one way of measuring inclusion, as well as specific interventions for students with ASD, would be to document time spent in general education classroom pre- and post-intervention.

A recent program evaluation involving 120 teachers in four primary and four high schools (four students overall were on the autism spectrum) expressed similar perceptions (Idol, 2006). Generally, teachers in this study were positive about inclusion but were conservative in their judgments of appropriate supports and placements. The majority of teachers preferred to have resource rooms available for student tutoring or wished to have the special educator or instructional aide in the regular education classroom. Most respondents felt positive about their

collaborations and administrative supports and preferred using instructional assistants to help students with and without disabilities.

2.2.5 Experience with children with disabilities

Research has revealed that the teacher contact with persons with disabilities has been predominant in the literature of teacher attitudes toward inclusion. Positive attitudes of mainstream teachers toward inclusion were associated with teacher's experience and contact with children and adults with special needs (e.g. Avramidis, Bayliss & Burden, 2000; Janney, Snell, Beers & Raynes, 1995; Leatherman and Niemeyer, 2005; LeRoy & Simpson, 1996; Yunker, 1988). Leroy and Simpson also showed that as Michigan teachers' experience with children surged over a three-year period, their confidence in teaching the population increased as well. Taking this idea one step further, other studies have found evidence that once teachers who initially had negative views of inclusion gained experience with children with disabilities, their attitudes were significantly changed and were more favorable toward the practice. Janney et al. (1995) found that teachers who were initially hesitant to integrate children with disabilities changed their views upon implementing inclusion because of the benefits to the students.

The attitudes of 19 elementary teachers, in ten Vermont schools were investigated using interviews and a survey where teachers were asked to describe and rate their attitude to having a child with severe disabilities in their classroom after having the experience (Giangreco, Coninger, Dennis, Edelman & Shatman, 1993). Seventeen of the nineteen teachers reported "transforming experiences" and reporting having more positive feelings about inclusion, once teachers saw the benefit to both students with disabilities as well as typical children. Teachers

perceived improved knowledge of how to interact and teach all children in their class, increased involvement with the student, changes in their attitudes, reflective abilities, confidence and awareness of the importance of being a role model for students. Two teachers perceived no change in ability, attitude, or ownership of the class.

In other studies, teachers' attitudes toward novel instructional procedures change when they see the impact on their students, especially the students they consider more difficult to teach (Berman & McLaughlin, 1976; Gersten, Carnine, Zoref & Cronin, 1986). Soodak and Podell (1993, 1994) have shown that teacher self-efficacy is associated with the willingness to support regular education placements for children with disabilities and to take responsibility for the students in their classrooms. These studies suggest that experience with children with disabilities may positively impact their attitudes toward inclusion but it is unknown whether or not experience with children with autism would have a similar impact.

Similarly, McGregor and Campbell (2001) examined teacher experience and attitudes of mainstream and special educators toward integration in Scotland. The largest discrepancy in the results indicated a significant difference between regular and special education staff regarding the importance of attitudes in implementing successful integration ($X^2 = 9.31$, $p < 0.01$). Only 33% of experienced mainstream teachers and 42 % of inexperienced mainstream teachers believed that successful integration is dependent on staff attitudes compared to 78% of the special educators. Authors of this article also found that mainstream teachers who had previously taught a child with ASD were significantly more positive in regard to coping with behaviors as well as the integration of children with autism. Nearly 50% of mainstream, experienced teachers agreed with full integration when possible, but believed that it might negatively impact some children with autism. The association between positive attitudes and

classroom experience with children with autism echoed findings from many studies of children with various disabilities.

Other studies than those mentioned above, however, have contradicted this reasoning, showing that teachers' receptivity toward inclusion declines as they acquire experience, for example, as preservice teachers enter the field (Wilczenski, 1993) or when teacher efforts to help children with disabilities are unsuccessful (Soodak, Podell & Lehman, 1998). In an early study, Stephens and Braun (1980) found no significant association between teachers' contact with students with severe disabilities and their attitude toward teaching the children in general education classrooms.

In a study examining teacher views of their personal self-efficacy and attitudes toward including children with autism in particular, Messemer (2010) found that 90% of teachers felt confident that they could teach all children, but that inclusion requires additional time, training and administrative support. This result contradicts much of the research related to the positive association between teacher experience and positive attitudes toward inclusion. D'Alonzo and colleagues (1997) reported that general educators saw more problems than benefits to inclusion and suggested that teachers may be reticent to embrace inclusion unless the system is revamped and the problems addressed (D'Alonzo, Giordano, & Vanleeuwen, 1997).

Barnes (2008) investigated attitudes of 93 teachers toward inclusion of children with autism based on teacher demographics related to gender, years of experience, teaching placement, previous experience with inclusion and amount of training with autism. ANOVA revealed that respondents teaching for five or fewer years had significantly higher ratings on the inclusion survey ($F(2, 90) = 5.045, p = .008$). No difference was found on years of experience teaching or teaching placement in primary, middle, or high school. This finding is counter to

studies of children with disabilities that found grade level to be a factor, with primary school teachers holding more positive views of the practice (Savage & Wenke, 1989; Salvia & Munson, 1986).

2.2.6 Child outcome and classroom quality

The association between teacher attitudes and improved outcomes for children with autism, specifically, has been addressed very little in the literature to date. In general, research has shown a correlation between positive teacher attitudes and improved performance in children with disabilities in inclusive settings (for example, Ferguson, Meyer, Juniper, & Zingo, 1992, York et al., 1992). A few researchers have reported that teachers who feel less positive about inclusion use effective instructional inclusion strategies less often than other teachers (Bender, Vail & Scott, 1995; Munson, 1986; Schumm & Vaughn, 1991). For example Bender and colleagues surveyed 127 teachers in eight elementary and three middle schools in Georgia (Bender, Vail & Scott, 1995). They found that teachers with a more positive attitude toward inclusion tended to report using more effective instructional strategies, as did teachers with higher regard for their own efficacy. The authors noted that all of the measures used self-report by general education teachers, which may have biased the results.

Soodak, Podell, and Lehman (1998) reported that acceptance and positive regard for inclusion have indeed, improved the quality of instruction. They surveyed 188 general education teachers about their attitudes toward including children with disabilities in their classroom. They measured classroom quality using the Differentiated Teaching Survey, a survey by teachers of how often they engage in specific teaching behaviors. When teaching efficacy

was high, teachers who used differentiated instruction were significantly less hostile toward inclusion than teachers who did not use differentiated teaching. However, when teacher efficacy was low, differentiated instruction had no effect on hostility toward inclusion. Instruction by teachers with positive views of inclusive practice was considered more effective than that of teachers who had negative views. The problem with this study, as well, is that all of the instruments used were teacher surveys. Classroom quality was measured by teacher self-report, which is a measure of how the teachers view themselves, but may not present a true picture of quality classroom practices. There was no other evidence reported, regarding classroom quality. It is important to use more objective measures of efficacy and to align those outcomes with teacher attitudes.

Kelly (2004) investigated whether teacher attitudes toward inclusion were associated with teachers' ratings of behavior of children with ASD in their classrooms. Special educators who had more positive attitudes toward inclusion rated the children as showing improvement on two Vineland subscales. Significant correlations were found between the special educators' evaluations of VABS Coping Skills subscale and the attitude toward inclusion scale ($r = .54$, $p < .01$) and weaker correlations between special educators attitudes and the Vineland Play and Leisure Time subscale ($r = .30$). No significant results were found for the general education teachers. In other words, general education teachers who had more favorable attitudes toward inclusion did not rate the children as making greater improvements on the scales (Kelly, 2004). This finding that general education teachers' attitudes were not dependent on the included child making progress was an unexpected, yet could be seen as a positive outcome.

According to Cook, Tankersley, and Cook (2000) empirical evidence is lacking that teacher's attitudes toward the concept of inclusion correspond with effective instruction and

student outcomes. They make the point that teachers who agree with inclusive philosophy may not necessarily engage in teaching interactions that result in positive outcomes for children.

A recent study from the researchers (Cook, Cameron & Tankersley (2007) included 50 teachers across 16 schools and seven of the 65 included students had an autism diagnosis. Teachers' ratings of the students with disabilities were significantly higher than ratings of their peers in nominations of concern, indifference, and rejection. The authors suggest that elevated levels of concern and instructional support might be a positive finding, if this concern and support results in those students achieving appropriate outcomes

The impact of teacher attitudes on classroom quality is not well researched. As a matter of fact, Buysse and Hollingsworth (2009) have reported that efforts to measure quality in early childhood have focused on overall program quality and not inclusive program quality for children with disabilities. (Buysse & Hollingsworth, 2009, p. 5). The same could be said for children at the start of formal schooling in kindergarten and first grade.

2.3 SUMMARY

In conclusion, existing research has most frequently focused on teachers' perspectives of the inclusion of children with various disabilities, not specifically, children with autism. Due to the nature of autism, and unique challenges associated with the diagnosis, the need exists to better understand teacher attitudes and factors that impact the experience of children with ASD in general education classrooms. In addition, it is essential that studies examine the performance and growth of children with ASD in school settings. Considering the increasing prevalence of

the diagnosis as well as the enrollment of children in mainstream schools, it is crucial to understand how the children are received in order to understand their experience.

In general, teacher training and professional development has most frequently been reported to influence attitudes toward inclusion of children with various disabilities (e.g., (Avramidis & Norwich, 2002; Scruggs & Mastropieri, 1996) and for children with autism (Jindal-Snape, Douglas, Topping, Kerr, & Smith, 2005; Lamberson, 2006; Messemer, 2010; Park & Chitiyo, 2011). Teacher related factors (such as training, age and teaching experience) have been examined more frequently than child-related factors, perhaps because these variables are easily collected.

Teacher beliefs that children with disabilities should be educated in regular classrooms have been found to significantly decrease in conjunction with increased severity of disability (Avramindis & Norwich, 2002; Cook, 2001; Forlin, 1995; Scruggs & Mastropieri, 1996). On the other hand, students with the most intensive needs (including children with ASD) are less frequently rejected by teachers than students with mild disabilities because teachers tend to adjust their expectations for students with severe disabilities (Cook, 2001). Teachers have often expressed less positive attitudes toward teaching students with cognitive or behavior disorders (Soodak, Podell & Lehman, 1998) and consider children with emotional and behavioral challenges as having the most difficult needs to meet (Bowman, 1986; Chazan, 1994 Soodak, Podell & Lehman, 1998). Teachers are more positive about including children who do not require additional management or instructional efforts (Center and Ward, 1987). These findings have implications for children with autism who often exhibit behaviors that may be problematic in the classroom and sometimes require more extensive curricular modifications and behavior management strategies.

Teachers of children with autism that needed AAC reported that having the children in their classroom was challenging, stressful and required additional supports (Finke, McNaughton & Drager, 2009). Although this qualitative study focused on children with autism, it was limited to a convenience sample of just five teachers.

The presence of paraprofessionals has been investigated to a lesser extent; seven studies addressing teacher attitudes were included in this review, with conflicting results. Paraprofessionals provide support, significantly impacting attitudes toward inclusion in a positive way (Null & Minnes, 2007). This result was reported in a study that used invented scenarios for preservice teachers. Results may differ for experienced teachers in real settings. Paraprofessional attendance may lessen the interaction between the teacher and included child, as well as peers in the classroom (Marks, Shrader & Levine, 1999; Giangreco, Edelman, Luiselli & McFarland, 1997) or engender indifference toward the included child by the teacher (Cook, Cameron & Tankersley, 2007). Conversely, comparable levels of teachers' perceptions of closeness have been reported, whether or not the paraprofessional was with the included child (Robertson, Chamberlain & Kasari, 2003). Further research is needed into the associations between paraprofessionals in the classroom and teacher attitudes, as well as the impact on child gains in behavioral regulation, academic and social progress.

According to Cook, Tankersley, and Cook (2000) empirical evidence is lacking that teacher's attitudes toward the concept of inclusion correspond with effective instruction as well as student outcomes. Research is needed to discern whether functional skill acquisition is achieved for children with autism in inclusive settings. Kelly (2004) looked at whether teachers' attitudes toward inclusion correlated with child gains, but used the CARS, which is typically

used for diagnostic purposes and conducted correlational analysis. In the present study, additional and more rigorous analysis will be utilized.

Another issue that teachers have expressed strong opinions toward is placement; the amount of special education services and the amount of time students spend in segregated or inclusive classrooms. Heiman (2004) found that the majority of teachers surveyed preferred that students receive academic support outside of their classrooms but favored inclusion; subjects supported partial inclusion, not fully inclusive placements. In another study that included teachers of children on the spectrum, teachers were positive about inclusion but were conservative in their judgments of appropriate supports and placements (Idol, 2006). The majority of teachers preferred to have resource rooms available for student tutoring or wished to have the special educator or instructional aide in the regular education classroom. It is not clear whether or not teacher attitudes differ, according to how much time the child spends in the classroom, or if this time results in child gains in skills.

Experience with children with disabilities was also a predominant topic in the review of the literature, although the studies had somewhat conflicting results. Only two studies examined the effect of experience with children with autism on teacher attitudes. McGregor and Campbell (2001) found that teachers who had taught a child with ASD were significantly more positive to the inclusion of children with autism and coping with problem behaviors. In contrast, Lamberson (2006) found that teachers with more experience received lower scores than teachers with lesser experience on a scale measuring attitudes. There is some evidence of a correlation between positive attitudes and improved performance of children with disabilities in inclusive settings in very early studies (Evans et al., 1992; Ferguson, Meyer Juniper & Zingo, 1992; York et al, 1992).

It is clear that the impact of teacher attitudes on classroom quality requires examination. There is no research, to date, that investigates the impact of teacher attitudes on the quality of their practice, for children with disabilities and specifically for children with autism. Farrell (2004) claimed that in addition to defining and measuring inclusion as the extent a child with a disability is present in a mainstream setting, acceptance, participation and achievement must be considered. The proposed study will address participation and achievement in addition to teacher attitudes toward including children with autism in their classrooms.

Teachers are at the center of the issue in inclusive classrooms. Teachers are charged with translating theory into practice and implementing inclusive practices, not just espousing rhetoric or advocating a philosophy. And yet, according to von der Embse, Brown, and Fortain (2011) as of this year, there is a lack of research identifying best practice in promoting inclusion for students with autism from kindergarten through high school. A review of research over the past ten years indicated the need for studies that use inclusion as an independent variable and identify practices that promote inclusion (von der Embse, Brown, and Fortain, 2011). It seems that including children with autism is a ‘learn as you go’ process for teachers and students. With this in mind, the educators’ approach, attitudes and knowledge are integral to the process of including children with autism in regular education.

From this review of the literature, it is apparent that research is needed into teacher attitudes toward including children with autism. Child factors that may impact teacher attitudes have been examined less frequently than teacher attributes, such as training, age, and experience. The two factors identified in the literature review to have been researched the least are the major focus of the present study, namely, child progress and classroom quality. The relationship between teacher attitudes, teacher behaviors/classroom quality and child progress

will be explored. Is the progress of children with ASD in the regular classroom influenced by teachers' attitudes toward inclusion? Is classroom quality associated with teacher attitudes? Do teacher attitudes influence child progress? Is classroom quality associated with teacher attitudes? Do teacher attitudes influence child progress?

Although small-scale qualitative studies can contribute to the knowledge base, attitudes toward inclusion initiatives on a statewide scale may provide outcomes that are relevant in diverse classrooms and generalizable across rural, suburban and urban settings. Such is the case of the inclusion initiative for children with severe disabilities across Pennsylvania from which data will be extracted data for the proposed study.

3.0 METHODS

The proposed study is based on data collected from existing research, a mandated program evaluation of a statewide inclusion initiative, the aim of which was to work with parents and families to facilitate the inclusion of children with severe disabilities into their neighborhood kindergarten and first grade classrooms. The present study will focus on teacher attitudes and factors such as placement and progress of children with autism and the quality of inclusive classrooms. Conditions of the research are that teachers in the state were mandated to participate in this initiative and all classrooms received support (once weekly) by inclusion consultants.

Specifically, the following research questions will be addressed in the present study:

- 1) Are children with autism placed more frequently in full-time special education services than children with other diagnoses?
- 2) Do children with ASD who receive itinerant, supplemental, and full-time services make gains in functional skills over the course of the school year?
- 3) Is the type of placement of children with ASD associated with children's functional assessment scores at posttest?
- 4) Do teacher perceptions and/or classroom quality predict functional skill assessment scores at posttest of children with ASD?

- 5) Is classroom quality associated with more positive teacher attitudes towards inclusion of children with ASD

3.1 PARTICIPANTS

3.1.1 Site Selection

Fifty-five public school districts requiring assistance in including children with disabilities in neighborhood general education classrooms were identified, based on low or insufficient LRE (least restrictive environment) ratios. A statewide advocacy organization managed the program and fifteen consultants per year participated. The goal of the initiative was to enroll 60 school districts, 30 districts per year comprised of ten districts in each of three geographic areas of the state (eastern, central and western) over two years. The Pennsylvania Department of Education (PDE) allowed districts that were involved with the program in the first year to continue participating in the second year if they chose to do so, a minor revision of the program specifications. Although school districts were permitted to participate in the second year, teacher participation in the school districts was mandatory. It is important to note that teacher participation was mandatory, controlling for selection bias. Mandatory participation should protect against systematic difference in participants from the wider population, allowing for generalizability of results.

3.1.2 Sample Selection

Once enrolled, consultants worked with teachers and school administration to include children in the regular classroom or to increase the amount of time the child spent with typical peers. Approximately one quarter of the children remained in self-contained placements, despite enrollment in the inclusion initiative. Decisions to remain in segregated classrooms were made by parents and school personnel, based on their consideration of individual child needs. Each consultant had anywhere between three and twelve classroom assignments and their employment hours were contingent upon the number of children on their caseload. Consultants were to visit each classroom once per week. Consultation was tailored to the individual needs of the children enrolled in the initiative.

Both years, school districts were selected with the following criteria:

1. The number of parent(s) in the school district willing to consider having their child educated in the general classroom with supplementary aids and services for 80% or more of the school day, or;
2. A parent who desired a more inclusive placement for their child in the general education classroom for at least part of the school day.

3.2 CLASSIFICATION OF THE RESEARCH

The proposed analyses, using the existing program data, can be classified as effectiveness trials, as outlined in this section. It is generally understood that effectiveness trials are practical and

measure the degree of benefit in the natural world. They are said to have a high degree of generalizability and a lesser degree of internal validity (Gartlehner, Hansen, Nissman, Lohr, & Carey, 2006). On the other hand, efficacy trials are explanatory, measuring whether an intervention produces expected outcomes under ideal, controlled conditions. A group of researchers have proposed seven benchmarks of study design to help researchers distinguish effectiveness studies from efficacy studies when conducting reviews (Gartlehner et al, 2006). These benchmarks are: populations in primary care settings, less stringent eligibility criteria, health outcomes, long study durations/clinically relevant study modalities, assessment of adverse events, adequate sample size and intention to treat analysis. The authors suggest that increased “emphasis on effectiveness studies may influence changes in presentation in systematic reviews and policy initiatives” (Gartlehner et al, 2006, p. 3).

The study outlined in this overview meets the suggested criteria for effectiveness trials. Research has taken place in schools and children received multiple interventions. There are few inclusion or exclusion criteria; the research took place over the course of a school year, and included adverse or unfavorable results and responses. Functional capacity in the natural setting will be examined and sample size will include over 30 subjects. Attempts will be made to include and explain such factors as subjects who drop out and survey responses that deviate from the format of the questions.

3.2.1 Ethics

The Institutional Review Board (IRB) of the University of Pittsburgh designated the original program evaluation research as exempt, requiring no additional parental consent since the

evaluation was mandated by legal settlement. PDE required a process to encourage parent involvement in the initiative to move from segregated to inclusive settings. When parents agreed to enrolling in the initiative; they also agreed to participate in the program evaluation. The goal of the program evaluation was to examine and assess all aspects of the inclusion initiative. The current study was submitted to the IRB after the final data collection period as research using existing data. The application was accepted and given exempt status, using extant data.

3.3 RESEARCH DESIGN

The study is a retrospective, multi-site, multi-measure regression study. Do teacher attitudes influence their instructional and classroom behaviors, as measured by the Inclusive Classroom Profile (Soukakou, 2010)? Farrell (2004) asserted that *acceptance*, *participation* and *achievement* must be considered. Acceptance and participation will be reflected in the ratings of the Inclusive Classroom Profile (ICP) (Soukakou, 2010). The ATEC will be used to measure the functional progress of children. The quality of classroom practices will be examined, not only by the classroom profile, but also by the progress of the children in the classroom.

The overall intent of the research design was to explore the relationships among teacher attitudes, child test scores and classroom quality. Data from the program evaluation that met the inclusion requirement will be analyzed for this study. Consultants were trained on the administration of the tools used in the study. The forms, assessments and survey are described in the following section.

3.3.1 Data Collection

Separate trainings were held in the eastern and western sections of the state to introduce the program evaluation and to train the consultants on the various tools they were asked to complete. Powerpoint presentations were used to convey specific information on the program evaluation as well as specific training on the assessments, forms and surveys. Webinars, email and phonecalls were also used to answer questions, clarify procedures and update newly hired consultants on the process. An example of a supplemental training guide, a reminder of procedures for consultant reference, is provided in Appendix A. It must be noted that although the consultants received training on the assessments, administration and scoring reliability cannot be reported.

Researchers provided an list of identification numbers to be assigned to teachers and children. The confidentiality of participants (children, parents and teachers) was fundamental to the evaluation. A program representative acted as “honest broker,” assigning these identification numbers to individuals and removing all child and teacher names prior to sending the list back to the researchers. The honest broker also distributed the forms to the consultants or put the forms on an internal website to be downloaded by the consultants.

The consultants were charged with writing/typing the child and teacher identification numbers on the forms. Self-addressed stamped envelopes were provided to the teachers, in order for the teacher perception surveys to be returned directly to the investigator. This procedure was put into place to maintain teacher anonymity and allow for presumably more truthful and valid information. The program evaluation focused on collecting information regarding the consultants, teachers and students in the participating school districts. Forms and

surveys were chosen from available sources or developed, specifically for the project, based on existing tools and literature reviews.

3.3.2 Forms and Assessments

Determining the success of inclusive practices is extremely complicated (Hayes & Gunn, 1988).

Major barriers in efforts to evaluate classroom quality are related to the complexity of inclusion and the lack of practical, evidence-based tools and methods to measure successful inclusion.

Researchers agree that effective instructional practices are important to successful inclusion.

Practices that support the participation of children in academic and social activities, such as peer support, cooperative learning strategies, flexible grouping, and activity based learning have been reported to foster successful inclusion of children with disabilities (Janney & Snell, 1996;

Scruggs & Mastropieri, 1994

Attempts were made to choose tools that consultants could learn within limited training opportunities and complete within reasonable amounts of time. It was also extremely important to use tools that could measure and quantify necessary supports and classroom practices that have been found to be necessary for successful inclusion.

Inclusive classroom profile. The Inclusive Classroom Profile (ICP) (Soukakou, 2010) is a new tool, used to document appropriate classroom practices that support high-quality inclusion. The author describes the ICP as, “a structured observation rating scale designed to assess the quality of provisions and daily practices that support the developmental needs of children with disabilities in early childhood settings” (Soukakou, 2010, p. 2). The tool was designed to complement existing program quality measures but with a focus on measuring the quality of

instructional strategies and classroom practices to meet the individual needs of children in inclusive settings (Soukakou, Winton & West, 2012).

A recent validation study reported results of a field test of 51 center-based early childhood programs that included 151 children with disabilities. Interrater reliability over nine sessions was acceptable (range .51-.99) and internal consistency was high ($\alpha = .85$). Construct validity was reported through a moderate correlation ($\rho = .51$) between the total score of the ICP and the Early Childhood Environment Rating Scales (ECERS-R; Harms, Clifford & Cryer, 2005) (Soukakou, Winton & West, 2012).

The ICP contains 11 items comprised of quality indicators and detailed scoring criteria for each indicator. The assessment uses a seven point Likert scale for the indicators. It was designed to evaluate early childhood settings, preschools and child care rooms, but due to the dearth of evidence-based tools for documenting inclusion, it was deemed to be the best choice of tools for the study. Five of the 11 items on the original ICP that were most relevant to kindergarten and first grade classrooms were chosen for use in the study. Those items are:

1. Adaptation of space and materials/equipment
2. Adult involvement in peer interactions
3. Membership
4. Support for social communication
5. Adaptation of group activities

The abbreviated version of the ICP can be found in Appendix B. The author of the tool provided guidance and information for training and using the assessment. This was in lieu of

formal training, which was not yet available on the assessment. The information was conveyed to the 15 consultants who completed the assessments on the classrooms that were assigned to them.

Demographics forms. Separate demographic forms (child and teacher) were developed to collect basic information regarding the participants. Demographic information for the child included age, grade race/ethnicity, number of siblings, diagnosis and type of special education and related services received. Disability categories included categories utilized by the state data reporting agency. The categories are synonymous with the disability terms found and defined in the Code of Federal Regulations (C.F.R.) Section 300.8 (34 C.F.R. § 300.8) and are as follows: Autism, Deaf-blindness, Deafness, Emotional disturbance, Hearing Impairment, Intellectual disability, Multiple disabilities, Orthopedic impairment Other health impairment and Specific learning disability Speech or language impairment, Traumatic brain injury, Visual impairment. The amount of special education services the child received was documented in the three categories, as written into the Individual Education Program (IEP) that is used statewide. The three categories quantify the amount of special education services as follows (Pennsylvania Department of Education, 2008):

- Full-time: Special education supports and services provided by special education personnel for 80% or more of the school day
- Supplemental: Special education supports and services provided by special education personnel for more than 20% but less than 80% of the school day
- Itinerant: Special education supports and services provided by special education personnel for 20% or less of the school day

A section also included information about paraprofessional involvement, prior early intervention, medication and home based services. Basic demographic items on the teacher and

consultant forms included age, education and major, teaching and professional development experience. Demographic forms were completed one time per year.

Child progress measure. The *ATEC (Autism Evaluation Treatment Checklist)* (Rimland & Edelson, 1999) was used to measure the progress of the children in the study. The ATEC uses a 3 to 4-point Likert scale, and assesses basic skills, enabling the tool to show small incremental changes in child abilities as well as changes over time. The ATEC form is one page long, is written in family-friendly language, and is to be completed by those who know the child best, including parents, teachers, therapists and caretakers. ATEC is divided into four developmental domains: Speech/Language/Communication, Sociability, Sensory/Cognitive Awareness, and Health/Physical Behavior. The authors have chosen not to copyright the ATEC and have made it available for download on the Autism Research Institute's website. The website has scoring software available for public use and based on analyses from 1350 responses, the authors report the internal consistency of the total score as high (.942). They also cite three studies that found the ATEC to be sensitive to changes as a result of interventions or treatment.

Teacher perception survey. An assessment to measure perceptions, attitudes and knowledge of inclusion was developed specifically for this study. The perception measure was based on the Parent Attitudes toward Inclusion (PATI) Scale, authored by Palmer, Borthwick-Duffy and Widaman (1998). The PATI Scale was designed to detect factors that impact parent perceptions of inclusive practices for their children with profound disabilities (Palmer et al., 1997). Permission to modify the scale as needed for the purposes of the project was given by the original authors. The revised Teacher Perception Survey (TPS) scale consists of 17 items, modified to include items that reflected objectives of the initiative and distributed into three sections. The first five statements and the last statement reflect attitudes toward the general

concept of inclusion; the label for these items is ‘General Attitudes. Statements 6, 7 and 13, labeled School Climate, focus on perceptions related to the school staff and available supports at the school. Statements 8 through 12, 14 and 16, labeled ‘Self-efficacy’, focus on teacher knowledge and self confidence in their abilities to practice inclusion. Items on the teacher survey were modified to reflect the teacher’s voice, for example, wording might be changed from ‘my child’ to ‘a child’. The survey uses a 4 point Likert scale (1=strongly agree through 4=strongly disagree) to allow teachers to select the degree to which they felt the statement reflected their opinion regarding various aspects of inclusion. Both the Teacher Perception Survey and the Teacher and Child Demographic forms can be found in Appendix B.

Consultation monitor. A ‘Consultation Monitor’ used previously by the researchers, was tailored to the goals of the inclusion initiative. The purpose of the monitor was to track and quantify the consultation process via electronic spreadsheets. Documentation on the monitor included participants in the consultation activities (parents, teachers and related service professionals, and the time each consultant spent with teaching teams. The monitor also recorded the focus of consultation process in the targeted areas of the Supplementary Aids and Services (SaS) toolkit. Communication modes comprised the type of contact (phone calls, observation, verbal guidance, modeling, etc.) and the amount of time was documented in the mode column in minute increments. Formulas were entered into the spreadsheet to quantify the entries. The monitor will be used to decipher the amount of time consultants engaged in training and support for the children in the study.

3.3.3 Procedures

The consultants served as facilitators in completing the child demographic information and the ATEC, with information gathered from the multidisciplinary team, including parents and school staff. Consultants filled out the monitor after each contact, tracking their activities and time. They also completed the ICP, in the regular classroom, whenever the child spent enough time to reasonably observe and complete the tool, given the recommended administration time. Teachers completed the Teacher Perception Surveys and mailed them directly to the researcher. If a child with autism and a child in the other diagnostic category were in the same classroom and had the same teacher, they were excluded from the analyses. The demographics forms were completed one time for each teacher and child enrolled in the study. The TPS forms used in the analyses were completed once between January and March.

The ATEC was administered twice per year, in January/February and May/June in the first year and September and May/June in year two of the initiative. Inclusive Classroom profiles completed between December and January of year 1 and 2 were used in the analyses. The Consultation Monitor was completed each month and submitted teletronically. The intensity of consultation was derived from the amount of total time the consultant documented for each child in the study. A table of the data collection schedule can be found in Appendix B. Consultants were responsible for facilitating data completion and submitting assessments. The reasons for incomplete data and missing assessments was not under control of the researchers. Since missing data can not be explained, only children with all relevant assessments will be included in the current study.

3.4 HYPOTHESES

Based on a the review of the literature, the null hypothesis (the assumption that the result occurred by chance) and alternative hypotheses (that the difference in groups was not a result of chance) will be tested. The research questions and related null (H_0) and alternative hypotheses (H_a) statements for this research are presented below.

1. Are children with autism placed in full-time special education services more frequently than children with other disabilities? H_{01} : Children with autism are placed in full time special education services at the same rate as children with other disabilities. H_{a1} : Children with autism are placed in placed in full time special education services at a higher rate than peers with other disabilities.

2. Do children with ASD who receive itinerant, supplemental, and full-time services make gains in functional skills over the course of the school year? H_{02} : Children with autism receiving itinerant, supplemental and full-time services by special education personnel will not make gains in functional skill acquisition. H_{a2} : Children with autism in itinerant, supplemental and full-time services by special education personnel will make gains in functional skill acquisition.

3. Is the type of placement of children with ASD associated with children's functional assessment scores at posttest? H_{03} : Children with autism in receiving itinerant, supplemental and full-time services will make the same amount of progress despite the difference in intensity of services. H_{a3} : Children with autism will make different amounts of progress when they receive itinerant, supplemental or full-time services.

4. Do teacher perceptions and/or classroom quality predict functional skill assessment scores at posttest of children with ASD? H_{04} : Variables hypothesized to impact scores (teacher attitudes and classroom quality) are not predictive of higher posttest scores of children with autism. H_{a4} : Variables hypothesized to impact scores (teacher attitudes and classroom quality) are predictive of higher posttest scores of children with autism

5. Is classroom quality associated with more positive teacher attitudes towards inclusion of children with ASD? The question addresses classroom quality for children with ASD. H_{05} : Positive teacher attitudes will correlate with higher ratings on the observed quality of their classroom practice. H_{a5} : Positive teacher attitudes will not correlate with higher ratings on the observed quality of their classroom practice.

3.5 RESEARCH DESIGN

3.5.1 Data Preparation

The dataset for the proposed studies was created, using the variables pertinent to the research questions. All assessments and surveys were entered into excel spreadsheets. Students and teachers were sorted as labeled by identifier numbers. The data was merged into the Statistical Package for the Social Sciences (SPSS) for Windows and SPSS was used for data analysis.

Attempts were made by the researcher to contact consultants to supply incorrect or missing information on the forms that they completed. Missing items on the perceptions surveys were not addressed, since the surveys were sent back anonymously. Typically, consultants were

able to provide input on missing items with the exception of two scenarios. In the first scenario, three consultants that had the most incomplete data left the program and were not able to be contacted. In the second scenario, items were missing because consultants were unable to obtain information from parents; most often the items were in the Health and Behavior domain of the ATEC. In both scenarios, missing items occurred consecutively, with three or more items in a row. List-wise deletion was used when items were missing on the assessments rather than data imputation using an EM (expectation maximization) algorithm due to the nature of missing data.

3.5.2 Analytic Plan

Descriptive and inferential statistics will be used to explore factors associated with responses on the teachers' perceptions survey, the teacher and child demographic forms and child assessments will be analyzed to determine whether children with autism demonstrated significant changes in skills and whether there is an association between assessment results, classroom quality and teacher attitudes. More specifically, the following analyses will be conducted to answer each research question. Vesey and colleagues (2011) stress the importance of setting the alpha level a priori. The alpha level will be set at .05 for the analyses (the null hypothesis will be rejected if the *p-value* is less than .05) and when higher significance is reached, the level will be noted.

1. *Are children with autism placed in full-time special education services more frequently than children with other diagnoses?* A chi square test of independence will be used to decipher if children with autism are placed in segregated (full time special education), supplemental or itinerant placements and how these placements compare with placements of children with other disabilities. The chi square (χ^2) test will be used to examine observed frequencies of placement

of students in full-time, supplemental and itinerant settings. If the chi square statistic is not equal to or higher than the critical value, the null hypothesis will be rejected and the result will be assumed to be due to chance.

2. Do children with autism receiving itinerant, supplemental and full-time special education make functional skill gains over the course of the school year? To answer the question of whether children with autism make functional skill progress in itinerant, supplemental and full-time placements, three paired sample t-tests will be conducted between the mean ATEC scores of the participants on the pretests and posttests of children with ASD. Children's progress in the areas of communication, sociability, sensory/cognitive awareness and health/behavior at pretest and posttest will be compared. The mean scores on both of the subscales and total score of the ATEC will be entered into the pairwise comparisons. The number of children with ASD receiving itinerant special education services is small ($n=10$). A power analysis revealed that, in order for an effect size of 0.5 (at $\alpha = .05$) and .80 power, (recommended by Cohen, 1992), the sample size should be 64 subjects per group, for a two-tailed test and 39 for a one-tailed test. Results will be examined with this in mind.

3. Is the type of placement of children with ASD associated with children's functional assessment scores at posttest? A one-way analysis of covariance (ANCOVA) will be conducted to decipher whether placement accounted for the difference in posttest scores of children with autism. The ATEC posttest scores will be the dependent variable, with pretest scores as the covariate, to control for differences in child progress due to individual child ability. Support by consultants, based on the amount of time consultants spent working with the teacher on behalf of the individual child will also be controlled for in the analysis. Placement will be the independent variable. Initially, it was presumed by the evaluators, that all children enrolled in the inclusion

initiative would be placed in regular classrooms on a full time basis. However this proved not to be the case; children received a continuum of services. The situation provides an opportunity for the progress of children with autism across the continuum of inclusive placements to be compared based on the ATEC scores.

4. *Do teacher perceptions and/or classroom quality predict functional skill assessment scores at posttest of children with ASD?* The analyses will be conducted in three steps. In the first step, the dependent variable is the ATEC posttest score. The ATEC pretest score will be entered as an independent variable, in order to control for differences in child progress due to individual child ability. Other key variables identified in the literature review will be entered into the model, for the purpose of controlling for over or under estimation of the association between teacher perceptions and child progress. Additional independent variables will include intensity of support by consultants; and placement (the category of special education services). The R-squared value of the model will then be observed.

Step 2: The second step of the regression will be run with the ATEC posttests scores as the dependent variable. Independent variables will be the same as in step one and will include the IV's that were significant predictors. Teacher Perception Survey scores will be added as a predictor to determine whether teacher perceptions predict child progress on the ATEC. The significance of the beta-weight associated with the TPS score will be observed to see if teacher attitude is a significant predictor.

Step 3: The final step of the regression will be run with the ATEC posttests scores as the dependent variable. Independent variables will be the same as in step one and two, including the IV's that were significant predictors. Predictors that are not found to be significant will be removed and the step will be completed to get a final model. The ICP will be added as predictor.

The significance of the beta-weight associated with the ICP score will be observed to see if classroom quality was a significant predictor of posttest scores. The significant predictors in the model represent variables known to have an impact on posttest scores.

A power analysis was conducted to determine the adequate sample size for the regression. For an anticipated effect size of 0.15, power level 0.8 with 2 predictors at probability level .05, the minimum sample is 67. The current sample is smaller ($n = 39$) and does not meet the requirement.

5. Is classroom quality associated with more positive teacher attitudes towards inclusion of children with ASD? To investigate whether classroom quality is associated with teacher attitudes toward inclusion of children with autism and other disabilities, a bivariate correlation will be run with the ICP and Teacher Perception Survey Scores for each teacher/classroom. The Pearson product moment correlation will be used because the measurements are on an interval scale. The direction, strength of the relationship and the p -value will be reported.

3.5.3 Summary

Using these methods, it is the intent of the study to investigate the placement of children with autism and teacher attitudes toward inclusion when children with ASD are enrolled in their classrooms. From the research to date, it is not evident what variables impact teachers' perceptions toward the inclusion of students with autism in their classrooms. It is also not clear if placement impacts the progress of children with autism. The specific questions posed will contribute to the literature base and provide insights into including the expanding population of children with ASD in general education classrooms. As a result of the proposed study, we may

be able to discriminate which of the general findings are applicable to teachers' attitudes toward inclusion when a child with ASD is enrolled in their classroom. In response to recommendations by researchers (Mancil et al, 2009; von der Embse, Brown & Fortain, 2011), in addition to examining attitudes, child progress in inclusive settings will be measured, the findings, backed with data. As with all children, children with autism must experience growth and progress across placements. Ultimately, many interventions will be necessary to assist in learning and behavioral support for children with autism in inclusive classrooms. Individualizing support for this heterogenous group of individuals requires much effort; attitudes may be at the root of this effort to successfully include children with autism.

4.0 RESULTS

The purpose of this study was to investigate the extent that children with autism are included in the regular education classroom as well as associations among teacher attitudes, the quality of the inclusive classroom and functional skill acquisition of children with ASD. A description of the participants and results of the analyses for each research question will be presented in this chapter.

4.1 DESCRIPTION OF THE SAMPLE

4.1.1 Child Characteristics

Data was extracted from a statewide program evaluation. Participation was required of school districts and teachers; parents made the choice to enroll their child in the program. Inclusion in the current study required children to have three complete assessments. Seventy-eight ($N = 78$) children met the inclusion requirement for the study: 39 children had an ASD diagnosis and 39 children had disabilities other than ASD. Children in the total sample ranged from 5.1 (years, month) to 8.0 ($M = 6.23$, $SD = .73$). For the children with autism, the range in ages was 5.1 to 7.4

($M = 6.21$, $SD = .66$). For the children with other disabilities, the range in ages was 5.0 to 8.0 ($M = 6.26$, $SD = .78$). The distribution of disabilities in the study sample is displayed in Table 1. In addition to the qualifying disability, 11 (28%) of children in the other disability group and 13 (33%) of children with ASD had speech/language impairment. There was a space on the demographic form where the specific disability could be written. Five children who did not have autism had the following diagnoses listed under ‘Specific Disability’: selective mutism, Di George syndrome, Erb’s Palsy and ADHD ($n=2$). Under Intellectual Disability, four children were listed as having Down Syndrome. Table 2 shows the grade level, race/ethnicity, and gender distribution for the sample.

Table 1. Qualifying disabilities of child participants

Disability Category	<i>n</i>	%
Hearing impaired	1	1.0
Deafness	4	5.0
Visual impairment including Blindness	1	1.0
Traumatic brain injury	1	1.0
Intellectual disability	20	26.0
Emotional disturbance	3	4.0
Orthopedic impairment	2	3.0
Specific learning disability	1	1.0
Other health impairment	2	3.0
Multiple disabilities	4	5.0
Autism	39	50.0

Table 2. Characteristics of children in the sample

	ASD <i>n</i> (%)	Other <i>n</i> (%)	Total <i>n</i> (%)
Grade			
Half-day kindergarten	3 (7.7)	8 (20.5)	11 (14.1)
Full-day kindergarten	18 (46.2)	16 (41.5)	34 (43.6)
First grade	18 (46.2)	15 (38.5)	33 (42.3)
Race/Ethnicity			
Hispanic	4 (10.3)	5 (12.8)	9 (11.5)
African American	11 (28.2)	3 (7.7)	14 (18.0)
Caucasian	16 (41.0)	27 (69.2)	43 (55.1)
Asian	0 (0)	1 (1.1)	1 (1.3)
Other	2 (3.1)	0 (0)	2 (2.6)
Missing	6 (15.4)	3 (7.69)	9 (11.5)
Gender			
Male	31 (79.0)	23 (60.0)	54 (69.2)
Female	8 (21.0)	16 (40.0)	24 (30.8)

4.1.2 Teacher Characteristics

A total of 73 teachers taught the 78 children in the sample. Five teachers in the other disabilities group had two children enrolled in the study in their classrooms, but none of the teachers

included in the total sample had a child with ASD and a child in the other disabilities category. Complete teacher demographic forms were not part of the inclusion criteria for the study and many of the forms had missing items. To exclude the forms with missing items would have reduced the sample size further. For this reason, the teacher response rates per demographic survey question will be provided in addition to the available demographic information.

Teachers of children with ASD had a response rate for age of 58% ($n = 21$). The majority (32%) of teachers of children with ASD reported their age in the 22-31 year range. The response rate for years of teaching experience and gender was 72%. ($n = 28$). Years of experience ranged from 1 to 35 years ($M = 12.25$, $SD = 9.07$) and all of the respondents were female.

For children in the other disabilities group, 81% ($n = 30$) of teachers reported age. Teachers of children in the other disabilities group were slightly older than teachers of children with ASD. All of the teachers that responded to the question of gender (78% response rate) were female. Nearly 80% of teachers reported total years teaching experience. Years of experience ranged from 4 to 42 years ($M=16.76$, $SD = 9.35$). Additional teacher demographic information can be found in Table 3.

Table 3. Education and study concentration of teacher participants

	ASD		Other	
	Response Rate	n (%)	Response Rate	n (%)
Age ranges	58%		81%	
22-31 years		9 (.43)		6(20.00)
32-41 years		6 (28.57)		10 (33.33)
42-51 years		2 (9.52)		5 (16.67)
52-61 years		4(19.05)		7 (23.33)
62-71 years		0 (0)		2 (.07)
Highest Degree	72%		73%	
Bachelors		6 (23.08)		2 (7.4)
Some grad school		7 (26.92)		7 (25.9)
Masters		13 (50.0)		18 (67.7)
Major Area of Study	89%		92%	
Elementary Education		21 (65.6)		22 (88.2)
Special Education		5 (15.6)		3 (8.8)
Early Childhood Education		5 (15.6)		7 (20.6)
English as a second language		1 (3.10)		1 (2.9)
Child Development		0 (0)		1 (2.9)

4.2 RESULTS OF THE ANALYSES

Each research question has been posed, followed by a description of the relevant results.

4.2.1 Question 1

Are children with autism placed more frequently in full-time special education services than children with other disabilities? The first analysis compares the placement categories of children in the other disabilities group and children with ASD. State placement categories were used in data collection and listed on the child demographic form for parents to complete. The numbers of children in each placement group appear in Table 4.

More children with ASD in this sample were placed in full-time special education services than were children with other disabilities. Equal numbers of children with ASD received itinerant and full-time special education. Whereas, more than three times the number of children with other disabilities received itinerant special education than received full time special education.

Table 4. Placement/Amount of Special Education received by each disability grouping

	ASD	Other
	<i>n</i> (%)	<i>n</i> (%)
Itinerant	10 (25.6)	21 (53.8)
Supplemental	19 (48.7)	12 (30.8)
Full-time	10 (25.6)	6 (16.4)

Of the children in the total sample receiving full-time special education services, 62.5% had ASD and 37.5 % had other disabilities. Children with ASD also received supplemental special education at a higher rate than children with other disabilities. Of the children in the total sample receiving itinerant services, 67.7% had other disabilities and 32.3% had autism, basically the inverse of the percentages for full-time special education services.

A Chi Square test of independence was used to test the hypothesis that the two categorical variables, placement and disability, were related. The percentage of children placed in full-time, supplemental and itinerant special education services differed by disability group, $X(2, n = 78) = 6.48, p = .039, V = 0.288$. The calculated value is larger than 5.99 and the probability of obtaining this value by chance is less than 5% demonstrating a statistically significant difference and moderate effect size. The distribution between disability grouping and placement was unlikely due to chance variation and the null hypothesis was rejected.

4.2.2 Question 2

Do children with ASD who receive itinerant, supplemental, and full-time services make gains in functional skills over the course of the school year? To examine whether children with ASD made improvements in functional skill acquisition in the three placement categories, three paired sample t-tests were conducted on the ATEC pretests and posttest scores. Means and standard deviations for the ATEC pretests and posttests for each placement category are displayed in Table 5.

Table 5. Mean (SD) pre- and post-test scores for children with ASD in each placement category

	Itinerant (<i>n</i> = 10)		Supplemental (<i>n</i> = 19)		Full-time (<i>n</i> = 10)	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Communication	21.30 (4.76)	22.80 (4.52)	23.58 (2.89)	23.26 (3.59)	24.50 (3.44)	25.80 (2.39)
Sociability	25.50 (8.48)	30.40 (6.74)	17.84 (10.99)	32.16 (4.67)	12.90 (11.14)	35.80 (2.86)
Sensory/CA	24.80 (5.98)	25.40 (5.58)	28.05 (4.73)	27.68 (5.36)	29.60 (2.68)	29.60 (6.54)
Health/Behavior	58.40 (7.29)	61.40 (6.00)	64.42 (6.05)	65.58 (4.91)	65.30 (4.35)	68.90 (3.10)
Total Score	130.00 (18.11)	140.00 (19.31)	133.89 (9.33)	148.68 (14.22)	132.30 (11.61)	160.10 (12.30)

Of children receiving itinerant services, statistically significant differences in mean pre- and post-test scores were found in the total ATEC score, $t(9) = -2.43$, $p = .038$, $d = 0.485$. The difference in scores approached significance in the area of Sociability, $t(9) = -2.21$, $p < .055$, $d = 0.640$. Ratings in scores increased in all domains, but mean differences did not reach significance in the other three areas (Communication, Sensory/Cognitive Awareness and Health/Behavior). Functional skill acquisition was achieved for children with autism in inclusive settings. Therefore the null hypothesis was rejected.

A second paired sample t-test was run on the ATEC pretest and posttests of children receiving supplemental services (special education services for 20% to 80% of the school day by special education personnel). Statistically significant results were found for the total score, $t(18) = -4.26$, $p < .001$, $d = 1.24$ and for the Sociability domain, $t(18) = -4.97$, $p < .001$, $d = 1.70$.

There was actually a slight decrease in scores in the area of Communication and Sensory/Cognitive Awareness from pretest to posttest.

A third paired sample t-test was conducted on ATEC pre and post assessments of children receiving full-time special education services (special education services for 80% to 100% of the school day by special education personnel). The mean scores of the ATEC total score were statistically significant from pretest to posttest, $t(9) = -6.39$, $p \leq .001$, $d = 0.759$. Children in the full-time category also made statistically significant progress on two of the four domains of the ATEC, Health/Behavior and most notably Sociability (effect size, *Cohen's d* = 2.816). Scores in the area of Communication rose slightly and scores in domain of Sensory/Cognitive Awareness stayed the same, as displayed in Table 6.

Table 6. Difference in mean scores for children with ASD receiving full-time services

	<i>MD</i>	<i>SD</i>	<i>95% CI</i>		<i>df</i>	<i>t</i>
			<i>LL</i>	<i>UL</i>		
Communication	-1.30	3.95	-4.12	1.52	9	-1.04
Sociability	-22.90	9.78	-29.90	-15.90	9	-7.40**
Sensory/Cognitive Awareness	0.00	7.90	-5.65	5.65	9	0.00
Health/Behavior	-3.60	4.88	-7.09	-0.11	9	-2.33*
Total Score	-27.80	13.77	-37.65	-17.95	9	6.39**

**< .001

* $p < .05$

It was only in the domain of Sensory/Cognitive Awareness that children receiving full-time services did not make more gains than children receiving itinerant services; changes in the

Communication domain were similar. The children receiving full-time special education services had higher mean scores on the ATEC than children receiving supplemental and particularly, children receiving itinerant services and considered fully included.

4.2.3 Question 3

Is the type of placement of children with ASD associated with children's functional assessment scores at posttest? An analysis of covariance (ANCOVA) was conducted to decipher if the difference between the scores of children receiving itinerant, supplemental and full time special education was significant. The previous three t-tests revealed significant differences between the pretests and posttests for children receiving differing amounts of special education. However, t-tests do not reveal whether the difference in posttest scores was significant across the three placement categories. Descriptive statistics are displayed in Table 7. The Autism Treatment Evaluation Checklist (ATEC) posttest score was the dependent variable (DV). Placement, the independent variable (IV) included three levels: itinerant, supplemental, and full-time special education services. The covariates entered into the equation were the ATEC pretest scores and the intensity of support by consultants.

Table 7. Mean scores and standard deviations of posttests by special education placement of children with ASD

	<i>n</i>	<i>M</i>	<i>SD</i>
Itinerant	10	140.00	19.31
Supplemental	19	148.68	14.22
Full-time	10	160.10	12.30
	39	149.38	16.54

For this question, the null hypothesis was rejected because there was a statistically significant difference between children's scores across placements at posttest. Intensity of support by consultants was not statistically significant. The effect of placement on ATEC total scores was statistically significant, after controlling for the pretest. The ANCOVA results are displayed in Table 8. In other words, there were variations between the groups and the difference in means was statistically significant between test scores of children receiving itinerant, supplemental, and full-time special education services. Placement accounted for 40% of the variance in ATEC posttest scores, holding constant the ATEC pretest scores. Intensity of support by consultants was not statistically significant in the ANCOVA and the variable was not retained in the next analysis.

Table 8. Associations between placement and posttest scores

	<i>df</i>	<i>MS</i>	<i>F</i>	Partial η^2	Observed Power
ATEC Pretest	1	1316.04	7.21**	.18	0.74
Intensity of Support	1	190.48	1.04	.03	0.17
Placement	2	963.44	5.28**	.24	0.80
Error	34	182.42			

** $p \leq .01$

4.2.4 Question 4

Do teacher perceptions and/or classroom quality predict functional skill assessment scores at posttest of children with ASD? This question examines both Teacher Perceptions Surveys (TPS) and Inclusive Classroom Profiles (ICP) as predictors. Descriptive statistics for the ICP can be seen in Table 9. Descriptive statistics for the TPS can be found in Table 10.

Table 9. Inclusive Classroom Profile Mean scores

	M	SD	Variance
Adaptations of space/materials/equipment	5.97	1.53	2.34
Adult involvement in peer interactions	5.26	2.35	5.51
Membership	4.87	2.12	4.48
Support for social communication	4.59	2.59	6.72
Adaptations of group activities	4.54	2.66	7.10
ICP total score	25.23	7.82	61.18

Table 10. Teacher Perceptions Survey for teachers of children with ASD

	Range	<i>M</i>	<i>SD</i>
TPS General attitudes	10.00 - 23.00	17.44	2.55
TPS School climate	6.50 - 12.00	9.35	1.39
TPS Self-efficacy	22.00 - 32.00	26.13	3.03
TPS Total score	24.00 - 65.00	52.91	5.32

The question of whether teacher attitudes and classroom quality predicted higher posttest scores for children with ASD was examined through multiple regression in three steps. The relative contribution of each model was assessed, by examining the change in R^2 . First, a multiple regression was conducted with the ATEC posttest score as the DV. The pretest scores and special education placement categories were entered as IV's. (Based on the result of the

ANCOVA, Intensity of support by inclusion consultants was not added as a predictor variable.) The ATEC pretest and placement significantly predicted child functional scores at posttest. $R = .377, F(2, 35) = 10.883, p < .001, f = 0.605$.

For the second step, another multiple regression was conducted to determine whether teacher perceptions predicted posttest scores over and above the other IV's in the previous analysis. Variables found to be significant in the previous analysis were retained as the independent variables, namely placement and pretest scores. The total score of the Teacher Perception Survey was entered as an additional independent variable, using the enter method. The results of the regression analyses can be observed in Table 11. The overall model produced the significant results with a large effect size ($f = .862$). There was a statistically significant main effect for pretest scores, placement and total TPS score on ATEC posttest scores. The addition of the TPS total score accounted for an additional 9% of the variance. The null hypothesis was rejected. The alternative hypothesis or theory that teacher attitudes predicted children scores at posttest was correct.

In the third step, regression was conducted to determine if the variability or difference in functional skill acquisition of the children with ASD is explained by the quality of the classroom (or enhanced teacher behavior and appropriate inclusive environment). Again, in the regression, the ATEC posttest score was the dependent variable. The ICP total score was the independent variable, in addition to the other three variables, found to predict higher posttest scores in the previous analyses, namely the ATEC pretest, placement and the TPS total score. The model was significant but no association was found between the quality of the classroom and higher posttest scores of children with ASD. The ICP scores were not predictive of posttest scores and did not contribute to the model ($R^2 \text{ change} = .004, F = 7.438, p = .624$).

Table 11. Predictors of child performance scores at posttest

	<i>B</i>	<i>Beta</i>	<i>t</i>	<i>F</i>	<i>R</i> ²
Model 2				10.05	0.463
ATEC pretest scores	0.501	0.37	2.94**		
Placement	9.428	0.41	3.33**		
TPS total score	0.929	0.30	2.37*		
Model 3 ^a				7.46	0.467
ATEC pretest	0.489	.363	2.82**		
Placement	9.079	.398	3.08**		
TPS total score	0.930	.299	2.35*		
ICP total score	0.137	.065	0.49		

Note: ^a model 3 includes the addition of the ICP to model 2

** $p < .01$

* $p < .05$

4.2.5 Question 5

Was classroom quality associated with more positive teacher attitudes towards inclusion of children with ASD? The purpose of the analysis was to examine associations between teacher attitudes and the quality of inclusive practice used in the classroom. Classroom quality was

evaluated in terms of recommended supports and teacher behaviors that promote inclusion. Five domains and the total score of the ICP were used to measure this construct.

First, to examine teacher perceptions of inclusion, descriptive statistics were conducted on the TPS that are provided in Table 9. Items on the survey were reverse scored so that higher scores indicated more favorable attitudes toward inclusion.

Teacher Perception Survey (TPS) scores consisted of the three sub-areas of the survey (general perceptions, school climate and teacher efficacy) and the total perception score. The highest possible total score on the TPS was a 68. The mean score of teachers of children with autism was 52.89 and for teachers of children with other disabilities was 53.51, representing generally favorable attitudes across both groups.

The previous analysis revealed that teacher perceptions but not classroom quality predicted child gains in posttest scores. Pearson product-moment correlation coefficients were computed to assess the relationship between classroom quality and teacher perceptions of inclusion. The correlation was run between the scores on the ICP and the total score and subscales of the TPS. As seen in the correlation matrix in Table 12, the only statistically significant correlations were within the scales, not between the ICP and the TPS. For example, a statistically significant correlation was found between the Membership subscale of the ICP and the total ICP score. No significant correlations were found between the TPS and ICP total scores or between any of the subscales of either tool. Results suggest that teacher attitudes toward inclusion were not associated with classroom quality and the null hypothesis was correc

Table 12. Intercorrelations between teacher attitudes and classroom quality

	Adaptation of space/ materials/ equipment	Adult involvement in peer interactions	Member -ship	Support for social commu- nication	Adaptation of group activities	ICP total score	TPS general attitudes	TPS school climate	TPS self- efficacy	TPS total score
Adaptations of space/ materials/ equipment	-									
Adult involvement in peer interactions	.617**	-								
Membership	.421**	.420**	-							
Support for social communication	.375*	.260	.100	-						
Adaptations of group activities	.449**	.327*	.269	.410**	-					
ICP total score	.772**	.732**	.604**	.650**	.735**	-				
TPS general attitudes	.124	.038	.040	-.147	.073	.023	-			
TPS school climate	.010	-.197	.132	.004	.129	.024	.286	-		
TPS self-efficacy	.075	-.053	.023	.007	.001	.008	.364*	.358*	-	
TPS total score	.105	-.063	.067	-.066	.069	.021	.762**	.603**	.837**	-

** $p < 0.01$

* $p < 0.05$

5.0 DISCUSSION

The final chapter of this dissertation begins with a brief summary of the study. The majority of the chapter is devoted to summarizing and discussing the findings in light of prior research. The findings are broken down into four topics for discussion:

- Placement
- Progress in functional skill acquisition
- Child progress: teacher attitudes and classroom quality
- Teacher attitudes and classroom quality

The chapter concludes with limitations of the study and recommendations for future research.

The current study was based extant data from a mandated program evaluation of a statewide inclusion initiative. The goal of the study was to explore possible relationships between teacher attitudes, teacher practices/classroom quality and child progress. The study comprised six questions; all of the questions involved issues that may be mediating factors in the progress of children with ASD. The first three questions were focused on the placement of children with ASD in itinerant, supplemental and full-time services and whether or not the children's functional skill levels increased in the respective placement categories. The other two

questions examined teacher perceptions in terms of child skills and classroom quality. The study revealed several interesting results.

5.1 PLACEMENT

The study found that children with autism were placed in full time special education at a higher rate than children in the other disability grouping. The finding is not surprising in light of previous research on ASD. Children with autism often present unique and complex challenges in the classroom (Scheuermann, Webber, Boutot, & Goodwin, 2003). Children with autism sometimes require additional modifications to instruction and behavior management strategies and this may explain why the children in the study were placed in full-time and supplemental special education more frequently than children with other disabilities. Placement decisions vary among school districts (Eaves & Ho, 1996; Fisher & Meyer, 2002) and it is not known how placement was decided for children in the study. The importance of the finding is that the result was based on 30 different school districts represented in the study. Despite possible variation in placement decision processes, the percentage of children placed in full-time, supplemental and itinerant special education services differed for children with ASD compared to children with disabilities other than autism.

As previously reported, some researchers suggest that autism-specific strategies and settings will likely meet the needs of the children (Marks, 2007); and specially trained professionals will be able to address the child's unique needs (Osgood, 1999). Deficits in social understanding, interfering behaviors and rigid adherence to routines may impede children's

ability to function and often require targeted interventions and intensive behavior management strategies (Ferraioli & Harris, 2011). On a practical level, individually designed interventions for children on the spectrum are often more difficult to implement in group settings. In reality, it is difficult to match appropriate, individual behavior and instructional strategies at the child level and the expectation that this can be done on at the classroom level is still a challenge in most educational settings (Delmolino & Harris, 2011).

5.2 PROGRESS IN FUNCTIONAL SKILL ACQUISITION

Children with ASD in itinerant, supplemental, and full-time placements made gains on most functional skill domains over the course of the school year. Children progressed but there was variation between groups. Children receiving full time special education services had higher mean scores on the ATEC than children receiving supplemental and particularly, children receiving itinerant services and considered fully included. Children in full time special education made significant gains in the Sociability and Health/Behavior domains and in the total scores with large associated effect sizes. Results from the current study suggest that placement was associated with child gains in skills. Instruction by special education personnel seems to be a crucial factor in child functional skill acquisition. It follows that children in full time placements may receive more targeted instruction. Generally the most effective interventions for students with disabilities, regardless of setting, have employed intensive and individualized instruction, combined with careful, frequent progress monitoring (Holcutt, 1996).

Earlier research on interventions for autism, particularly high intensity one-on-one interventions, have shown positive results (Reed, Osborne, & Corness, 2007; Weiss & Delmolino, 2006). However, the finding that children receiving full-time special education had significantly higher posttest scores in the Sociability domain is counter to published research. Studies of elementary school students with profound disabilities in inclusive settings have been reported to receive higher proportions of social interactions than children in special education classrooms (Hunt, Staub, Alwell, & Goetz, 1994) and to be involved in higher levels of communicative interaction than their matched peers in special education (Foreman, Arthur-Kelly Pascoe & King, 2004). One explanation for the large increases of Sociability scores in children in full-time special education placements is the considerably lower Sociability scores at pretest for the full-time group. The children had more room for improvement than children receiving supplemental and itinerant special education.

Findings revealed that children with ASD receiving itinerant services made gains across functional domains, with the Sociability domain approaching significance. The result that children made the most gains in Sociability is supported by previous research. Inclusive classrooms have been shown to promote the acquisition of social skills in children with autism. Studies have shown that social skills interventions that are implemented in regular classroom settings have better outcomes, in the form of higher maintenance and generalization rates (Bellini, Peters, Benner & Hopf, 2007). When children with autism are supported in typical settings, improvement in social skills can lead to improved and increased interactions (e.g., Harper, Symon & Frea, 2008; Koegel et al., 2001).

One of the highly encouraging results of the study is that children in all three placement categories made more gains in the Sociability domain than in the other areas. For children in all

special education placements to achieve higher Sociability scores at posttest may indicate that the area of sociability had the most potential for growth in the school setting.

Across all three special education categories, the Sensory/Cognitive Awareness domain of the ATEC showed the least improvement. Example items of this ATEC domain are: “Appropriate facial expression”, “Shows imagination” and “Venturesome”. Some items in the domain represent characteristics that are inherently more difficult to teach and may be less responsive to intervention.

The inclusion initiative provided support to children with all disabilities, in all special education placement categories. Counter to numerous studies citing inadequate support as a major factor influencing teacher opinions of inclusion, intensity of consultation was not a significant covariate in the current study. The reason for the finding that intensity of consultation was not associated with child gains is not clear. One explanation is that consultation provided to teachers may have been for purposes other than intervention and instruction, for example, for supporting teachers in finding outside resources or supporting parents in advocating for their child.

5.3 PREDICTORS OF CHILD PROGRESS

There is some evidence, in very early studies, of a correlation between positive attitudes and improved performance of children with disabilities in inclusive settings (Evans et al., 1992; Ferguson, Meyer Juniper & Zingo, 1992; York et al, 1992). Results of the analysis corroborate

these rather dated results. The study found that more positive teacher perceptions of inclusion predicted higher ATEC scores at posttest for children with ASD.

Teachers' attitudes or proclivity toward inclusion predicted higher ATEC scores. The effects may be bidirectional; teachers may have more positive attitudes toward inclusion when children with ASD in their classrooms make progress in skill acquisition. When teachers see that children are making progress, their attitudes may be positively affected.

The outcome that teacher attitudes predicted child progress may be related to the finding that children that made the most improvements received more intensive special education services. Regular education teachers may have more positive attitudes toward inclusion when they receive increased special education support for children with ASD. The finding echoes past research on teacher placement preferences. Heiman (2004) for example, found that most teachers surveyed preferred partial inclusive placements and students receiving academic support outside of their classrooms. Early studies have reported that elementary school teachers either were not opposed to pull-out models (Coates, 1989) or actually favored pull-out models for children with disabilities (Sammel et al., 1991). Teachers believe in the benefits of partial inclusion in general education settings for children with ASD and stress the importance of resource services for children with ASD in inclusive placements (Nickels, 2010).

There is no research, to date, that investigates the impact of teacher attitudes on the quality of their practice, specifically for children with autism. The quality of the classroom was not predictive of higher posttest scores of children with ASD. The characteristics of a successful inclusive environment appeared to play no role in children's functional skill acquisition, including sociability and communication skills.

The counter-intuitive result may relate back to the third research question and the finding that children with ASD in full-time placements made more gains than children receiving itinerant services. The intensity of services for children in full-time placements appeared to be associated with skill acquisition. Children in full-time special education placements were in inclusive classrooms for 20% or less of the school day. The problem could be that the Inclusive Classroom Profile was not relevant, considering the finding that children in full time special education achieved higher scores and the ICP assesses practices in inclusive classrooms. The inclusive classroom was observed, even if the child spent less than 20% of the day in that classroom. The quality of the inclusive classroom may not have been a factor in the progress of children due to the limited time the children spent in this setting. For this reason, the data may be skewed and the analysis may not support a valid answer to the research question.

5.4 ASSOCIATIONS BETWEEN ATTITUDES AND QUALITY

The prior analyses examined the progress of children with ASD; posttest scores were the DV. The study also investigated the extent to which classroom quality correlated with teacher attitudes towards inclusion of children with autism. According to Cook, Tankersley, and Cook (2000) empirical evidence is lacking that teacher's attitudes toward the concept of inclusion correspond with effective instruction as well as student outcomes. It is important to attempt to objectively measure inclusive classroom practice as this study did, rather than measure classroom practices through teacher self-report. Results of the study suggest that teacher attitudes toward inclusion were not associated with quality in the classroom. This result is

counter to published research that attitudes would make a difference in the quality of classroom practices (e.g., Scruggs & Mastropieri, 1996; Avramidis & Norwich, 2002; de Boer, Jan Pijl & Minnaert, 2011). Bender and colleagues, for example, found that teachers with a more positive attitude toward inclusion tended to report using more effective instructional strategies, as did teachers with higher regard for their own abilities (Bender, Vail & Scott, 1995).

However, as de Boer, Jan Pijl and Minnaert (2011) point out in the limitations section of their review of published literature, the studies used self-report rather than classroom observations of teacher behavior. Self-report may deliver socially desirable answers that may not coincide with teachers' actual practice and work with children with autism in the classroom. The present study used both self-report and observations of teachers' classroom practice. The research was grounded in the theory of Eagly and Chaiken (1993) that proposes a threefold definition of attitude, including a cognitive, an affective and a behavioral component. Although the study did not directly measure teacher behavior, classroom provisions and practices were examined. Teachers play a major role in developing activities, delivering instruction and establishing the quality of daily classroom practices. One might speculate that overlap exists between observations of teachers' practice and their behavior in the classroom.

At minimum, results that teacher attitudes did not correlate with the classroom quality for children with autism, may serve to emphasize the importance of observation of teacher behaviors in examining attitude. As Cook, Tankersley, and Cook (2000) have pointed out, teachers who agree with inclusive philosophy may not necessarily engage in teaching interactions that result in positive outcomes for children. The result that there was no association between teacher attitudes toward inclusion and classroom quality suggests that observation of practices may contribute to the study of attitude, rather the practice of using self-report in isolation.

If self-report is taken at face value, the finding may also be viewed as a positive one, in that teacher's personal thoughts on inclusive education did not impact their ability to create an appropriate classroom climate and to work with all children. It may be inferred that teachers' professionalism and commitment to educating their students outweighed their personal proclivity toward inclusion.

5.5 CONCLUSIONS

The current study has revealed four overarching findings. First, children with ASD were placed in full-time special education more frequently than children with severe disabilities other than autism. Secondly, children in all placements made gains in the area of Sociability, with children in full-time placements making the largest gains in the domain. Third, teacher perceptions of inclusion predicted higher posttest scores for children with ASD, that is, more positive perceptions of inclusion predicted higher scores. Lastly, teacher perceptions were not associated with classroom quality scores.

The results of the research show that children in the study received a continuum of placements and revealed that children in full-time special education made the most substantial progress in sociability and behavior. The intensity of services for children in full-time placements appeared to be associated with these gains. The implication is that the setting addressed individual needs and was, perhaps, the appropriate setting for this particular group of children.

The study examined what is actually happening in public school districts across the state. The results and discussion must be viewed within the context of the research, with the variations and shortcomings that come with program evaluation research in natural settings. These issues are discussed in the next section.

5.6 LIMITATIONS OF THE STUDY

The present research has several strengths, including the collection of data in public schools statewide, in rural, urban and suburban areas, large and small school districts with veteran and novice teachers, allowing for the possibility of generalization of the results. The importance of the results is due to several factors in addition to the diverse settings and mandated participation by teachers in identified school districts. Classroom teachers and staff were provided with weekly support by inclusion consultants. An effort was made to measure teacher's attitudes, as expressed through the survey and also by observation of classroom practices. Although not independent of the program, the data does not only rely on teacher self-report, which was often used in previous studies, as noted in the literature review. An attempt was made to use a more objective measure of teacher practices and to align those outcomes with teacher attitudes.

The study is not without limitations. First, the modest size of the sample, particularly within each special education placement, may have played a role in limiting the significance of some of the statistical comparisons conducted. In addition, teachers who sent back the perception surveys or completed the assessments may represent a more conscientious group of subjects than teachers whose forms did not meet the inclusion criteria. This characterization may

have impacted the TPS ratings and skewed the results.

The study uses quantitative data. Mixed method approaches have been advocated in social science research beginning with Campbell and Fiske (1959). Using quantitative data, as in surveys, it is not possible to deviate from the survey statements. Using mixed methods, qualitative data can complement quantitative results by corroborating findings and different evidence (words, pictures and narrative) can add meaning to quantitative data by corroborating findings and providing different evidence (Johnson & Onwuegbuzie, 2004).

The collection of data was ultimately dependent upon others, consultant and teacher participants in the study. Many attempts to track down and collect missing data were unsuccessful. Incomplete data impacted the numbers of subjects and the ability to report on every variable. It was not possible to control for additional covariates, such as the presence of paraprofessionals and early intervention involvement in preschool, due to missing responses to the items.

The tools used in the study were rating scales. Likert scales involve judgments on global behavior, as opposed to coding systems. Although all assessments have some measurement error, coding systems are more systematic observational measurements that provide a larger range of scores than rating scales and are potentially more sensitive (Yoder & Symons, 2010). In addition, training and support in rating items on the assessments was provided within the constraints of the program. Although assessment fidelity is rarely reported, the way in which ratings are given affects results. Scoring errors occur when assessors incorrectly score student responses, incorrectly interpret student responses, or are more lenient in scoring certain responses (National Center on Response to Intervention, 2013). Attempts were made to train the consultants, answer questions and provide feedback but interrater reliability was not assessed,

which is a major drawback.

Another limitation of this research is that it examined the inclusion of children with autism who were enrolled in the initiative. Although the inclusion initiative targeted children with severe disabilities, there was no information from the child's records, their cognitive level or particular battery used to diagnose ASD. All teachers, at all of levels of inclusive placements received support by inclusion consultants to some degree. There is no true treatment or comparison group and the study design is non-experimental.

5.6 RECOMMENDATIONS FOR FUTURE RESEARCH ON THE INCLUSION OF CHILDREN WITH ASD

Additional research is needed on the effectiveness of inclusive and self-contained placements. The current study examined several factors related to inclusion of children with ASD but did not address specific practices that have led to gains in skills or to successful inclusion. Decades of research on teaching children with autism is based on repeated trials in contrived settings; techniques that are not conducive to regular classrooms. Educators need meaningful ways to include children with autism in the general classroom. This does not mean, however, that special education services and one-to-one instruction should not be utilized when these options provide the best opportunities for child growth.

Until research-based interventions that are functional and practical for use in the natural environment can be implemented, children should benefit from evidence-based interventions available now in the necessary setting. Research is needed into new technologies and evidence-

based strategies that will facilitate the successful inclusion of children with ASD in regular classrooms. Functional performance is important to measure because the skills used in everyday activities are frequently difficult for children with autism. However, future studies should address academic achievement for children with ASD in inclusive kindergarten and first grade classrooms and as children progress through grade levels.

APPENDIX A

DATA COLLECTION SCHEDULE

For Each Year	Frequency	Completed	Person Responsible
Child Demographics Teacher Demographics Consultant Demographics	1 time per year	Beginning of year Year 1: January Year 2: October	Parent Teacher Consultant
Consultation Monitor	Each month	Ongoing (due before the 5 th of the following month)	Consultant
Inclusive Classroom Profile: Abbreviated Version	1 time per year	Used end of year data Year 1: May Year 2: May	Consultant
SPECS for IMFS Child Functional Capability Scale	2 times per year	Beginning and end of year Year 1: January /May Year 2: September / May	Consultant as Orchestrator with input from caregiver and teacher

APPENDIX B

EXAMPLE OF SUPPLEMENTAL TRAINING MATERIALS



Data Tips

Thank you again for completing and sending in your forms. Based on the data collected up until now, I've compiled a few pointers for your review.

Consultation Monitor

Save a blank copy of the Consultation Monitor on your desktop. Each month, begin a new monitor and do a 'Save as' with your name and the month (e.g., Jones_February.xls).

Please pay special attention to the Child and Teacher Identification numbers. You know who you mean, but we don't. For EVERY entry, you need to record the child and teacher ID numbers.

Please remember that the time you spend working is reflected in the Modes column. This If, for example, you are preparing materials, you would document that under: Written: 45 (minutes). If a '1' is placed in that column, we will assume that it doesn't mean one minute and will email you for instructions.

If you do a seminar or training for several teachers and/or parents, please type in the child ID number for each parent or teacher and child ID number for each teacher in attendance. If the training is 75 minutes, type 75 minutes in the modes column under "Face to face" and fill in the other fields as you typically would.

The Monitor will automatically add up the columns, please don't add the columns up yourself. If you start a new Monitor each month, this calculation function will work.

If you have an issue or category that you are addressing in the classroom that is not represented on the Consultation Monitor, please make a note of it. Right now, the only place to do this is at the very end of the Category section, under "Other". You can also let us know about it. If the same issue comes up repeatedly, we may add it on the Monitor in the future.

Send your monitor to me by the 5th of each month for the previous month.

Inclusive Classroom Profile (ICP)

The indicators beginning with a '1' (1.1, 1.2 etc.) are negatively worded items; please read carefully.

There is a section where you can add comments if you want to clarify your rating, but please do not add your own rating (NA, not observed).

ATEC

If you or the teachers don't observe an item that is represented on the scale in school and for this reason are unable to rate that item, please ask the parent/family for their input and assistance.

If you or the teacher or parent add remarks and don't rate the scale, we will contact you for clarification and ask for a rating. Please mark each item individually, rather than placing lines through an entire domain.

Please go over ALL forms before sending them in to make sure every item is rated; it's really easy to skip items.

APPENDIX C

FORMS AND ASSESSMENTS

INCLUSIVE CLASSROOM PROFILE

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SPECS for IMFS Abbreviated Version

Date of completion: _____

Observer: _____

Teacher ID: _____

Please circle the letter in the box with a yes (Y) if the indicator describes what you observe; a no (N) if the indicator does not describe the activities or behaviors displayed during your observation or a NA if the indicator is not applicable, according to the criteria on the page following the indicator page for each item. (Note: NA is an option only on some indicators.)

1. Adaptations of space and materials/equipment (O)			
<p>1.1 Most physical space precludes children from accessing many classroom areas and activities and adults don't help children access classroom's areas (e.g. stairs, various ground levels preclude children from accessing classroom areas). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.1 Some physical space is accessible by children and adults usually help children, when needed to access classroom areas (e.g., a ramp is available for child with physical disability; special chair or walker provided etc). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.1 Children can access many classroom areas independently (space is accessible for wheelchairs; there is enough space and clear ways between activity centers; classroom areas are well defined so that children know where to go; rooms and activity centers are labeled with pictures, words or signs depending on children's individual needs). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>	<p>7.1 Adults deliberately organize the physical space (including materials/ equipment) during the day to encourage peer interaction (e.g., teacher adds a chair to computer area for child who is standing and watching a peer playing; adult sets-up circle area to encourage children to read together; adult takes out more puppets to encourage other children to join the puppet area; adult repositions child on wheelchair so that she can face her peers). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
<p>1.2 Materials/equipment are not accessible by children either because they are not adapted appropriately or because adults do not offer the necessary help. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.2 In most classroom areas there are at least a few materials/equipment that children can access independently. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>	<p>5.2 In most classroom areas, there are many materials/equipment that children can access and use independently. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>	<p>7.2 Classroom has a great variety of professionally recommended toys, materials and equipment carefully selected to accommodate individual needs (e.g., sensory toys for child with sensory disorder, specialized equipment for visually impaired; adaptive toys for children w/ physical disabilities). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
	<p>3.3 Adults generally help children access materials/equipment in the classroom, when needed (e.g., adult helps child reach a toy from shelf; adult places adaptive scissors on table close to where child is working). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.3 Adults monitor how children use materials/equipment and provide the necessary support for individual children who have difficulty using materials purposefully (e.g., adult helps child use scissors to cut on paper; adult gives hand over hand assistance to child doing a puzzle; adult models for child how to hold pencil or use sand). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	

Criteria for rating indicators

1.2 Accessible= available at an area where a child can get it independently (e.g., on shelves where children can reach; located within view of children; labeled so that children know what they are etc.)

3.2 Score NA if: children's physical or mental ability is so impaired that they cannot access any materials.

In all other cases, score YES if: materials are placed, organized or labeled in ways that the children you see in the room can get them independently. To make this decision, you need to observe a couple of instances in which children access materials independently. If you don't see children accessing any materials and you don't see any materials that are adapted, or placed in accessible spots, DO NOT give credit.

5.1 This indicator does not apply to children whose motor ability is so limited that they cannot move around independently. In this case, score NA. In all other cases, score YES if: space is organized or adapted in such way which enables children to move around independently. The examples provided may only apply to certain cases, therefore, you don't need to observe those in order to give credit. You can score YES, if most children access many areas of the classroom independently. However, if you see a child that doesn't access the classroom independently and the space is not adapted as described in the examples, then DO NOT give credit.

5.2 Score NA if: children's physical or mental ability is so impaired that they cannot access and use any materials.

In all other cases, score YES if: materials are placed, organized or labeled in ways that the children you see in the room can get them AND use them independently. To make this decision, you need to observe a couple of instances in which the majority of the children use various materials independently.

Important note!: If you don't see children using any materials and you don't see any materials that are adapted or placed in accessible spots, DO NOT give credit. It is possible that children can use many materials independently but may choose not to on the day of your visit. However, many times this may be due to a lack of appropriate adaptations or accessibility of materials. Therefore, in cases where the majority of children you observe do not use most materials/equipment independently, ONLY give credit if in most classroom areas there are many materials which are adapted, suitable for their needs and easily accessible.

5.3 Purposefully=in ways suitable for the activity

2. Adult involvement in peer interactions (O)			
<p>1.1 Children are excluded from participating in activities and routines with their peers. (O)</p> <div>Y</div> <div>N</div>	<p>3.1 Children are allowed to participate in many classroom activities and routines with their peers (e.g., children can all play together in many activity areas). (O)</p> <div>Y</div> <div>N</div>	<p>5.1 Adults actively support peer interactions either by helping children initiate social interactions with peers or by helping children respond to peers' initiations appropriately (e.g., adult prompts child to respond to his peer during snack time; adult models for child how to request toy from peer; adult helps child roll a ball back to his peer). (O)</p> <div>Y</div> <div>N</div>	<p>7.1 Adults support children in sustaining social interactions with their peers (e.g., adult uses verbal prompts to help child sustain conversation with peer; adult sets up a group table game and helps children take turns; adult comments on children's group project with enthusiasm to encourage peer interaction and helps children sustain their cooperative play by elaborating on their behaviors and suggesting new ways to continue their play). (O)</p> <div>Y</div> <div>N</div>
<p>1.2 Very few or no attempts to acknowledge or respond to children's peer interactions in encouraging ways (e.g., adults constantly ignore children's efforts to interact with peers). (O)</p> <div>Y</div> <div>N</div>	<p>3.2 Adults occasionally acknowledge and/or respond to children's peer interactions in encouraging ways (e.g., adult praises two children reading a book together, smiles at children's social engagements; adult comments on how well children are cleaning up their toys together). (O)</p> <div>Y</div> <div>N</div>	<p>5.2 Adults strike a balance between getting involved in peer interactions and allowing the development of natural, spontaneous interactions among children (e.g., adults avoid interrupting children's conversations; adults let children play off on their own; adults usually build on what children are interacting about). (O)</p> <div>Y</div> <div>N</div>	<p>7.2 Adults actively encourage collaborative problem-solving between children and their peers. (e.g., Adult joins children's block building and helps children work together to generate hypotheses, solve problems and make decisions). (O) <i>NA Permitted</i></p> <div>Y</div> <div>N</div> <div>NA</div>
<p>1.3 Adults consistently control and restrict the initiation and development of spontaneous social interactions among peers (e.g., adults interrupt children's conversations; discourage spontaneous social exchanges between peers). (O)</p> <div>Y</div> <div>N</div>		<p>5.3 Adults actively encourage more socially competent children to model for or interact with children who find it difficult to form social relationships (e.g., adult invites child to play with isolated child; adult purposefully pairs two children for an activity; adult teaches child how to model appropriate requests for peer). (O)</p> <div>Y</div> <div>N</div>	

Criteria for rating indicators

3.2 Occasionally= at least 2 examples in which adults acknowledge or respond positively to children's peer interactions should be observed.

5.1 To score YES: several examples should be observed. Certain group activities can also count as examples. For example, giving a hug to a peer as part of a planned social group activity can count as a teaching supportive strategy. However, simply holding hands during circle time is not enough to count as an example.

5.3 "More socially competent peers" can include both children with and without identified disabilities.

7.1 To score YES: you have to observe several examples of reciprocal, sustained peer interactions resulting from adult facilitation.

7.2 Score NA if: children observed cannot engage in cooperative problem solving and, therefore, encouraging it seems inappropriate.

3. Membership (O)(I)

<p>1.1 No opportunities for children to assume social roles and responsibilities in the classroom (e.g., become helpers, set up a group activity) and, No opportunities for children to make choices about their routines and/or learning. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.1 Adults offer children some opportunities to assume social roles and responsibilities in the classroom (e.g., help at snack time; set up table for activity; weekly helper for circle time; child reminds play rules for children; child counts children in group etc). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.1 Adults provide the necessary support for children to make choices and decisions about their own learning and classroom experiences (e.g., child decides what activity center to join during free play; adult uses picture schedule to help child choose an activity). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>7.1 Adults offer children opportunities to make choices about the whole group (or a group of children). Adults provide the necessary support for children to make their choices (e.g., adult asks child to choose book for group story time; child chooses music activity for the group; children choose place for field trip). (O, I)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
<p>1.2 Frequent bullying and/or persistent teasing in the class towards children. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.2 Children are given some opportunities during the day to make choices regarding daily routines and/or activities (e.g., child can choose who to sit by; work with; child can choose between two types of snack). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.2 Peers show understanding and respect for children's differences in terms of academic performance, time schedule, or educational program (e.g., children show familiarity with presence of therapists; children may ask questions about why some children do some things differently but their questions, responses, and attitudes show understanding and respect towards individual differences). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>7.2 Individual differences are accepted and celebrated through group discussions and planned activities (e.g., adults use story time to discuss individual differences; adults talk to children about disabilities in positive ways; adults engage in role playing using characters with diverse strengths and needs). (O, I)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
<p>1.3 Adults do not intervene to stop the bullying or persistent teasing towards children. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.3 Adults most of the time intervene to stop bullying or persistent teasing between children in the classroom. (O) <i>NA Permitted</i></p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>		

Criteria for rating indicators

3.1 Social roles and responsibilities include: Helping set up the table for snack or activity; reminding other children of an upcoming classroom event; helping the teacher prepare materials for group projects; becoming the helper of the day etc. Cleaning up toys and food can count as one example (clean up).

Score YES if: At least 2 examples are observed with any child (with or without disabilities) in the classroom.

Score NO if: It is evident from the observation that children with disabilities are not given such opportunities (e.g., children with special needs are not encouraged to clean up their snacks; all children take a turn to help prepare snack excluding some children).

5.1 Several examples need to be observed with different children. To score YES: adults should not only offer children many choices, but also help them understand and express their decisions.

7.1 For this indicator, interviewing should occur only as a supplement to observational evidence. Score NO if: You do not observe adults offering any children these opportunities. If you observe adults offering typically developing children these opportunities, but you don't get a chance to observe an opportunity involving a child with a disability, then supplement your observation with questioning:

(I)Ask: How do you decide who is going to choose today's book/song? Do all the children get to have a turn? If yes, can you give some examples of decisions they are encouraged to make?

Score YES if: Teachers report that ALL children are offered opportunities to make group choices and provide at least one or two examples of group decisions that children are encouraged to make.

7.2 If you don't get to observe any examples of activities or discussions, interview the teacher.

(I)Ask: Do you plan any activities to acknowledge and celebrate exceptionality in the classroom? If yes, can you give some examples?

Score YES if: At least several examples of planned activities are described. Purpose of activity also needs to be clearly described.

4. Support for Social Communication (O, DR)			
<p>1.1 Adults make no attempts to adapt their communicative interactions with individual children (e.g., adults talk to all children in the same way, overwhelm children with speech or gestures too complex for their developmental level). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.1 Adults communicate with children at pace which enables them to respond (e.g., adult waits for child's response; speaks at slower rate for child with auditory processing difficulties). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.1 Adults adapt verbal communication to children's individual level of understanding (e.g., adult avoids long, complex sentences with child w/ speech delay; adult emphasizes words to support understanding; adult repeats question or prompt and waits for child to respond). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>7.1 Adults facilitate communication among children (e.g., adult encourages ALL children to sign during group activity if one child uses sign language; adult clarifies to other children what a child said; adult repeats child's comment for peer w/ speech delay; adult helps peer use pictures to communicate with non verbal child). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p> <p>7.2. Specific interventions involving Alternative Communication Systems (A.C. S) with children are used systematically during the day and are incorporated in daily activities and routines. (O, I, DR) NA</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>
<p>1.2 Adults ignore children's attempts to communicate or make no efforts to interpret them (e.g., adult ignores child's persistent pointing to a specific toy; child left crying for long period of time). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.2 Adults occasionally recognize children's attempts to communicate <u>and</u> respond to them promptly (e.g., adult acknowledges child's pointing and looks to see where child is pointing to; adult comments on child's effort to verbalize something; adult repeats child's words in effort to understand him/her). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.2 Adults seem well aware of children's communicative attempts and most of the time respond to them in relation to the meaning and situation (e.g., adult ends or modifies communication upon child's signs of frustration; adult encourages child to show her what she is pointing at; child covers ears in response to noise and adult responds with e.g. "You heard that loud noise. Did that scare you?"). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	
<p>1.3 Alternative Communication Systems (A.C.S) (e.g., PECS, visuals, sign symbols, voice communicators) are required by IEPs/ statements or professionals but not available in the classroom. <i>NA Permitted (O, DR)</i></p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>	<p>3.3 Adults make some attempts to adapt verbal or non-verbal communication to children's individual level of understanding (e.g., adults avoid overwhelming children w/ gestures; adult faces child w/ hearing impairment; adult talks to child at his/her eye level). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.3 Adults incorporate various non-verbal communication into activities & interactions with children to enhance communication with adults and peers (e.g., adult points to object that he is referring to while talking to child; adults uses visuals and props and gestures to support story telling; adult models manual sign for child; adult helps child use picture to make a request; adult uses a visual showing a sad face to help child communicate his feelings). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	
	<p>3.4 Alternative Communication Systems (A.C.S) (e.g., pictures, visuals, sign symbols, PECS, voice communicators) required by IEPs/ Statements or professionals are available in the classroom. (O, DR) <i>NA Permitted</i></p> <p><input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA</p>	<p>5.4 Adults use at least two of the following strategies with children: 1. Repetition; 2. Commenting and; 3. Expanding. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	
	<p>3.5 Adults use at least one of the following strategies with children: 1. Repetition; 2. Commenting; and 3. Expanding (see clarification notes). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>		

Criteria for rating indicators

1.2 *Communicative attempts include intentional behaviors by the child that aim at purposeful communication with an adult or peer (e.g., pointing, reaching, verbal requesting; gesturing etc.)*

3.2 *Occasionally= At least several examples (of adults recognizing children's attempts to communicate and responding to them promptly) must be observed with each child throughout the day to give credit. Promptly = adults usually respond within 5 sec from child's initiation. Adults may misread, at times, children's behaviors but you can still give credit if they are responsive to them most of the time.*

3.5 *To score YES: you need to observe at least 2 examples of one strategy used. The three strategies are:*

1. **Repetition:** *Adult repeats or recasts own words in order to emphasize important words (e.g., adult says to child "Do you hear the doggie? Hear the doggie? Doggie!")*

2. **Commenting:** *Adult comments on what the child appears to be attending (e.g., Adult watches child painting and says "You are painting with so many colours"; adult approaches child and initiates "Look! It's raining! ")*

3. **Expanding:** *Adult elaborates on what the child says. Expansions can be semantically when adult adds meaning (e.g., child says "doggie" and adult expands "Yes, that is a big, brown doggie") or syntactical when adult extends syntax (e.g., child points to cookie saying "cookie" and adult extends with "This is a cookie")*

5.1 *Verbal communication includes use of speech as well as paralinguistic aspects of verbal communication (emphasizing words, intonation etc.)*

5.3 *Non- verbal means of communication include: visuals, gestures, facial expressions as well as Alternative Communication Systems (A.C.S.) such as PECS, sign systems, voice communicators. Because use of certain A.C. S (e.g. sign language) often requires professional assessment, Do NOT underscore a classroom that doesn't use them unless there is evidence that they were professionally recommended. You can still score the descriptor from the way adults adapt and use non-verbal communication in their interactions with children. Several examples (3-4) need to be observed.*

5.4 *To score YES: you need observe at least 2 of the 3 strategies used (at least once). Strategies need to be integrated into activities and routines.*

7.2 *If A.C. S. are used in the classroom, look for evidence in the planning or interview the teacher about how these are used with the children.*

Evidence (DR or I) should demonstrate that A.C.S.s are used systematically (e.g., A.C.S. are used on a regular basis, purpose for using them and specific activities are identified, and children's progress is monitored).

5. Adaptations of group activities (O)

(Small and whole-group activities that are teacher-planned. e.g., story time; circle time; small group instruction; cooking projects; group art projects)

<p>1.1 Adults make no attempts to adapt group activities to support children's individual needs. (e.g., all children are presented always with the same materials, work on the same content, are stimulated at same pace, or work on the same goals). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.1 Children usually participate in some group activities with their peers (e.g., adults avoid pulling children out each time there is a group activity; child sits in cooking project with others but may be coloring on paper). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>5.1 Adults make some adaptations to the activities' objectives, materials or type of instructional support to promote children's engagement (e.g., adult reads shorter story to children with reading difficulty; adult positions child w/ visual impairment in the front of the group; adult gives child hand over hand assistance to perform song movements; adults give additional time for child to complete activity). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>7.1 Adults adapt the activities' objectives, materials or type of instructional support in ways that stimulate children towards exceeding their individual goals, while enabling them to engage in many same activities as their peers (e.g., during group writing activity, adult uses concrete props and works with child on pointing to letters; adult breaks task into concrete steps for child; adult shows child visual model of the completed project before child begins activity; adult uses manipulatives to support child's understanding of quantities). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>
<p>1.2 Children are excluded from participating in all group activities with their peers. (e.g., children always pulled out during group time). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>3.2 Children interact with materials and/or others in compliance with the overall demands of the group activity. (e.g., child attends quietly to story time; child scribbles on paper during group writing activity; child performs cooking activity with adult hand over hand assistance). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>		
<p>1.3 During group activities children either: a) do not interact at all with materials and/or others (e.g., children are spacing out; children are left alone and don't know what they're supposed to do) Or b) Children interact with materials, and/or others in ways that significantly disrupt the group activity (e.g., children are forced to participate in an activity despite expressing significant frustration; children distract peers and are not being supported by adults). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>		<p>5.2 In most group activities, children engage in the same type of activity as their peers, although they may be working on individual goals. (e.g., while children participate in cooking project, one child works closely with teacher on feeling the cooking ingredients). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	
		<p>5.3 Children's engagement in group activities is most of the time active and intentional (e.g., child finger-paints showing interest and motivation; child actively follows song rhymes in group; child actively traces name on paper). (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>	<p>7.2 During most group activities ALL children are actively engaged. (O)</p> <p><input type="checkbox"/> Y <input type="checkbox"/> N</p>

Criteria for rating indicators

3.1 Score YES if: children are encouraged to participate with their peers in at least one group activity. If a child is being pulled out from a group activity, do not underscore until other group activities are observed. Examples include: cooking activities, group art activity etc. Snack time, alone does NOT count as one activity for this indicator. If a child is encouraged to participate in a group activity but doesn't want to attend, you can still count that activity as an inclusive opportunity.

Special case: If there is only one child with a disability in the classroom and he/she is pulled out from the group activity(ies) to perform a one-to-one activity with an adult during the observation period, then, score 1.2 as NO, 3.1 & 5.2 as NA and score the rest of the indicators as they are (treating the one-to-one activity as a group activity).

5.1 To score YES: you need to observe children in their groups and score it based on the average performance of most children throughout most group activities observed. Groups can include whole group activities, such as story time in which an adult reads a story to all children, or small groups (e.g., 4-5 children) lead by different adults. Children may be grouped according to age, assessed needs or other ways. How groups are formed is not assessed by this indicator. Observe children with disabilities in their groups (including groups only of children with disabilities). To score YES, you need to see examples of ways in which adults adjust various aspects of the activity to maximize children's engagement. Adjustments can be made in the materials (e.g., easier story book, visuals, adaptive equipment; thicker brush); the activity's goals (e.g., while other children are drawing shapes, one child's task is to trace a circle); the level of instructional support (e.g., repositioning child; offering hand over hand assistance; modeling for child how to perform activity; adapting directions and prompts; repeating instructions for child). You need to see 1-2 examples that demonstrate that adults make some adjustments to the group activity in order to encourage children with SEN to participate actively.

Special cases: If you DO NOT observe any of the adaptations described above and at least one child is not engaged in activity, DO NOT give credit.

5.2 The purpose of this indicator is to assess the inclusiveness of adaptations of group time. To score YES, you need to observe all group activities in which children with disabilities participate in. Give credit if in at least half or more of the activities observed, children with disabilities were encouraged to become involved in the same type of activity (e.g., language, writing, art, or movement). Even if you only observe one group activity because children are removed from most group activities, you can still score it based on that one instance.

5.3 This indicator refers to the majority of the children with special needs in the group. However, if at least one child is constantly unengaged throughout most group activities, DO NOT give credit.

7.1 To score YES: you need to observe several examples of individual adaptations, which are carefully made to support each child's needs in the group and enable the child to engage in similar activities with his peers. Examples of adaptations can include the ones described in 5.1 but there are overall more systematic, highly individualized and aim at enabling the child to be actively engaged in many same activities as his/ her peers.

SPECS for IMFS CHILD DEMOGRAPHICS SURVEY

Child ID Number: _____

Each parent and consultant should fill out the survey together. This information is confidential and anonymous; we don't ask for names. Thanks for your help.

1. Sex of child: ☐ Male ☐ Female
2. Child's Date of Birth: mm/dd/yy ____/____/____ Number of Siblings ____
3. My child is in: ☐ Half-day Kindergarten ☐ Full-day Kindergarten ☐ First Grade

4. Child's Race/ethnicity					
<input type="radio"/> Non-hispanic		<input type="radio"/> Hispanic or Latino			
<input type="radio"/> White	<input type="radio"/> African American	<input type="radio"/> Asian		<input type="radio"/> Other	
<input type="radio"/> American Indian or Alaska Native					

5. Primary Caregiver's relationship to child (This applies to whomever is filling out this form.)					
<input type="radio"/> Biological Mother		<input type="radio"/> Adoptive Father		<input type="radio"/> Other Adult relative	
<input type="radio"/> Biological Father		<input type="radio"/> Step parent		<input type="radio"/> Foster Parent	
<input type="radio"/> Adoptive Mother		<input type="radio"/> Parent's partner (living in home)		<input type="radio"/> Other	

9. Qualifying Disability (✓ all that apply)	
<input type="radio"/>	Hearing Impairment
<input type="radio"/>	Deafness
<input type="radio"/>	Speech or language Impairment
<input type="radio"/>	Visual Impairment including blindness
<input type="radio"/>	Traumatic Brain Injury
<input type="radio"/>	Autism
<input type="radio"/>	Deaf-blindness
<input type="radio"/>	Intellectual disability
<input type="radio"/>	Emotional disturbance
<input type="radio"/>	Orthopedic Impairment
<input type="radio"/>	Specific learning disability
<input type="radio"/>	Other health impairment
<input type="radio"/>	Multiple disabilities
Specific diagnosis: _____	

6. Amount of Special Education your child receives	
<input type="radio"/>	Itinerant (20% or less of school day)
<input type="radio"/>	Supplemental (20-80% of school day)
<input type="radio"/>	Full-time (80-100% of school day) Segregated setting

7. Type of support your child receives	
<input type="radio"/>	Autism support
<input type="radio"/>	Blind –visually impaired support
<input type="radio"/>	Deaf and hearing impaired support
<input type="radio"/>	Emotional support
<input type="radio"/>	Learning support
<input type="radio"/>	Life skills support
<input type="radio"/>	Physical support
<input type="radio"/>	Speech and language support

8. Other information		yes	no
a	This is my child's first experience in a classroom with regular education students.	<input type="radio"/>	<input type="radio"/>
b	My child has an aide or TSS in the classroom. If yes, how many hours is the aide or TSS in the classroom? (for example: 2.5 hours)	<input type="radio"/>	<input type="radio"/> hours
c	My child participated in early intervention services in preschool.	<input type="radio"/>	<input type="radio"/>
d	My child receives support and programming at home now.	<input type="radio"/>	<input type="radio"/>
e	My child is currently taking prescription medication(s) related to his/her disability/diagnosis	<input type="radio"/>	<input type="radio"/>

SPECS for IMFS Teacher Demographics Information

Please read each question and fill in the blank or fill in the appropriate circle to indicate your answers.

Teacher ID: _____ Age: _____ years or Which of the following best describes your age?

Gender: ☐ Male ☐ Female

<input type="radio"/> 22-31	<input type="radio"/> 52-61
<input type="radio"/> 32-41	<input type="radio"/> 62-71
<input type="radio"/> 42-51	<input type="radio"/> 72 and older

Race/Ethnicity

☐ American Indian or Alaska Native

☐ Asian

☐ African American

☐ Native Hawaiian or Pacific Islander

☐ White

☐ Other

Total years teaching in current school district: _____

Total years teaching: _____

What is your highest degree?

☐ Associates

☐ Bachelors

☐ m Some graduate level classes

☐ Masters

☐ Doctorate

☐ Other

What was your major when you achieved your highest degree? (Please check all that apply.)

☐ Special Education

☐ Early Intervention

☐ Early Childhood Education

☐ Elementary Education

☐ English as a Second Language

☐ Child Development

☐ Other _____

Which of the following best describes your training in working with children with disabilities?

<input type="radio"/> Undergraduate	<input type="radio"/> Graduate	<input type="radio"/> Professional Development	<input type="radio"/> None
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Which of the following best describes your training in working with children with autism?

<input type="radio"/> Undergraduate	<input type="radio"/> Graduate	<input type="radio"/> Professional Development	<input type="radio"/> None
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Is there presently a co-teacher in your classroom? ☐ Yes ☐ No

Does your school offer support for specific professional development focusing on inclusion of children with disabilities in regular classrooms (trainings, coursework, workshops, conferences)? ☐ Yes ☐ No

TEACHER PERCEPTIONS SURVEY

Teacher ID:		School District:			
Date:					
Item	How strongly do you agree with the following statement?	1 Strongly Agree	2	3	4 Strongly Disagree
01	The more time a child spends in a regular classroom, the more likely he/she is to show educational benefits.				
02	If a child were to spend much of his/her day in a regular classroom, he/she would be more likely to build friendships with peers without disabilities in that room.				
03	All students are enriched by participation in a classroom by peers with disabilities.				
04	It is possible to modify most lessons and materials in a regular classroom to truly meet the needs of children.				
05	A regular education classroom provides more meaningful and functional opportunities for a child to learn than does a special education classroom.				
06	Most school staff understand the capabilities of children with disabilities.				
07	Administrators (principal, special education supervisor) listen and respond to my classroom needs and concerns for children.				
08	I respect parent's opinions and regard them as the expert when it				

	comes to their child.				
09	I feel that I communicate effectively with parents.				
10	I feel I have a positive attitude toward having children with disabilities in the classroom.				
11	I know how to help all children to participate fully in classroom activities.				
12	When necessary, I work effectively with the challenging behavior of children using positive strategies.				
13	The school is flexible in meeting all children's needs.				
14	I understand the rights of children and education law.				
15	I am knowledgeable about the range of supports that are available to children with disabilities.				
16	I know how to help parents find resources to meet their child's needs.				
17	It is possible to modify most lessons and materials in a regular classroom throughout children's formal education.				

Critical Incident Survey	
List 3 positive aspects of having an <i>Include Me</i> consultant working with you:	
1.	
2.	
3.	
List 3 concerns you have about integrating children with disabilities in your classroom:	
1.	
2.	
3.	

Adapted from Palmer, Borthwick-Duffy & Widaman (1997) and a review of relevant research.

C.1.1 Appendix subsection

This is a subsection (level-3 division) of appendix A.

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